Starbridge Networks

Lynx L-525: 4 Port and Wireless Modem

User Manual

VERSION 2.0

Product warranty does not apply to damage caused by lightning, power surges or wrong voltage usage. This product is for use only with UL Listed computers.

Table of Contents

GENERAL INFORMATION **3**
Package Contents **3**
Safety Instructions—Please read. **3**
Front Panel View **3**
Back Panel View **3**
INSTALLING THE LYNX L-525 ..... **3**
Connect the ADSL Line and Telephone **3**
Connect the PC to the Lynx L-525 ..... **3**
Connect the Power Adapter **3**
INSTALLATION DIAGRAM **3**
MOUNTING THE LYNX L-525 ..... **3**
CONFIGURING YOUR COMPUTER **3**
Windows 2000 ..... **3**
Windows XP **3**
LOGGING INTO THE LYNX L-525 ..... **3**
DEVICE INFO **3**
Summary **3**
WAN **3**
Statistics **3**
LAN Statistics 3
WAN Statistics 3
ATM Statistics 3
ADSL Statistics 3
ADSL BER Test 3
Route **3**
ARP **3**
QUICK SETUP **3**
ATM PVC Configuration **3**
ADVANCED SETUP **3**
WAN **3**
Connection Type 3
NAT **3**
Virtual Servers 3
Port Triggering 3
DMZ Host 3
Application Layer Gateway (ALG) 3
Firewall **3**
IP Filtering—Outgoing 3
IP Filtering—Incoming 3
MAC Filtering 3
Parental Control 3
Quality of Service (QoS) **3**
Routing **3**
Default Gateway 3
Static Route 3
RIP 3

DNS **3**
DNS Server 3
Dynamic DNS 3
ADSL **3**
DSL Advanced Settings 3
Tone Settings 3
Port Mapping **3**
WIRELESS **3**
Basic **3**
Security **3**
MAC Filter **3**
Wireless Bridge **3**
Advanced **3**
Station Info **3**
TROUBLESHOOTING—DIAGNOSTICS **3**
MANAGEMENT **3**
Settings **3**
Backup Settings 3
Restore User Settings 3
Restore Default 3
System Log **3**
Configure System Log 3
SNMP **3**
Internet Times **3**
Access Control **3**
Services 3
IP Addresses 3
Passwords 3
Update Software **3**
Reboot Lynx L-525 ..... **3**

General Information

The Lynx L-525 features 4 LAN ports and wireless capability.

Package Contents

The package includes one of each of the following items—

- 4-Port wireless Ethernet Lynx L-525
- 15 VAC AC power adapter
- RJ-11 telephone cable
- RJ-45 Ethernet cable
- Splitter
- User Manual / Quick Guide

Safety Instructions–Please read.

- Place your Lynx L-525 on a flat surface close to the cables in a location with sufficient ventilation.
- To prevent overheating, do not obstruct the ventilation openings of this equipment.
- Plug this equipment into a surge protector to reduce the risk of damage from power surges and lightning strikes.
- Operate this equipment only from an electrical outlet with the correct power source as indicated on the adapter.
- Do not open the cover of this equipment. Opening the cover will void any warranties on the equipment.
- Unplug equipment first before cleaning. A damp cloth can be used to clean the equipment. Do not use liquid / aerosol cleaners or magnetic / static cleaning devices.

Front Panel View

LED	Mode	Indication
Wireless	Solid	Wireless is enabled.
	No light	Wireless is disabled.
	Blinking	There is wireless traffic.
DSL	Solid	ADSL is connected.
	No light	ADSL is not connected. The ALARM led will be red.
	Blinking	The Lynx L-525 is connected to ADSL.
Internet	Solid	An IP Address has been obtained dynamically from the broadband network
	No light	No IP address was obtained. For static IP this will not light.
	Quick blinking	Traffic is passing.
Ethernet 1-4	Solid	Lynx L-525 is connected to the LAN.
	No light	No connection to the LAN. Check if the LAN cable is connected to the Lynx L-525.
	Blinking	LAN traffic
Alarm	Solid (red)	An Alarm condition has occurred.
	No light	Normal operation
Power	Solid	Lynx L-525 is powered on.
	No light	Lynx L-525 is not powered. Check if the Lynx L-525 is plugged in and if the power switch is turned on.

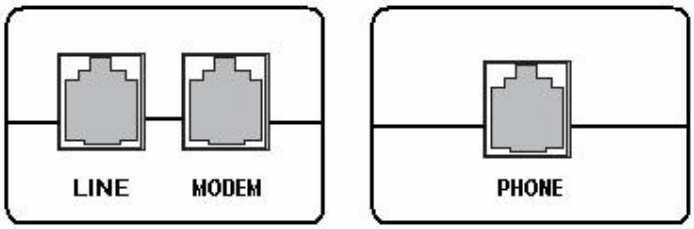
Back Panel View

Port	Description
Power Button	Press to turn the Lynx L-525 on and off.
Power	Connects to a 15 VAC AC power adapter.
Reset	***Restart***—press the button for less than 4 seconds. ***Default settings***—press the button for 4 seconds or longer.
LAN1-LAN4	RJ-45 connects the unit to an Ethernet device such as a PC or a switch.
Console	*NOTE:* To be used by maintenance professionals only. If the Lynx L-525 needs repair, bring it to a service professional.
Line	RJ-11 cable connects to the splitter provided.

Installing the Lynx L-525

Connect the ADSL Line and Telephone

An RJ-11 cable will be connected to the wall phone jack and the line-end of the splitter. Connect another RJ-11 phone wire from the modem-end of the splitter to the port labeled "line" on the Lynx L-525. A third RJ-11 phone wire will be needed to connect the telephone to the phone-end of the splitter.



NOTE: See connections on the installation diagram.

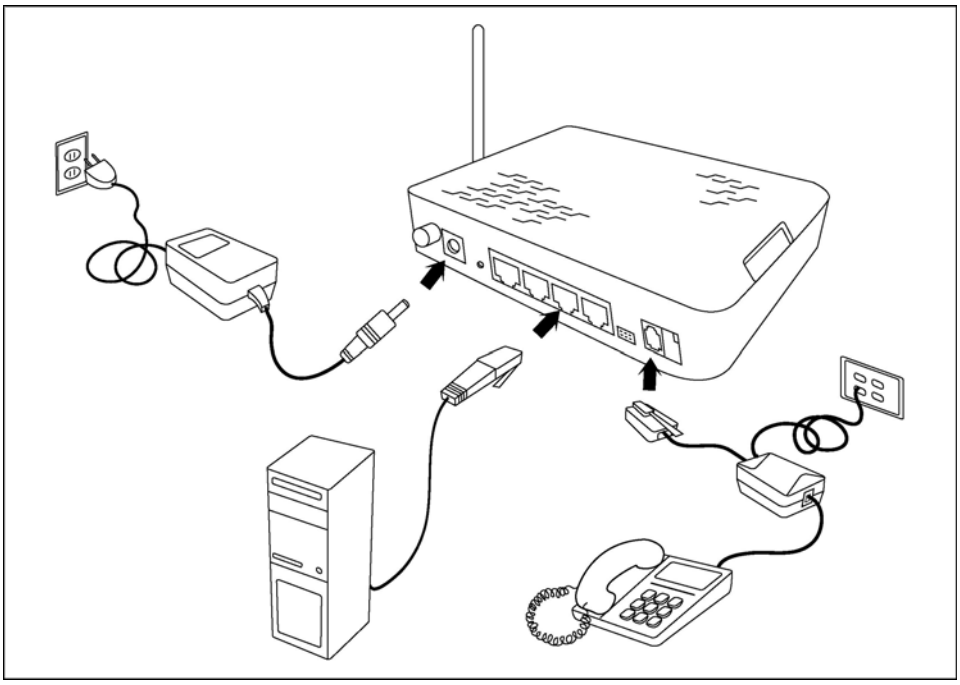
Connect the PC to the Lynx L-525

Use the Ethernet cable to connect your computer directly to the Lynx L-525. Connect one end of the Ethernet cable to one of the ports labeled LAN on the rear panel of the Lynx L-525 and connect the other end to the Ethernet port of your computer. Attach any additional PCs to the Lynx L-525 using RJ-45 cables to the port labeled LAN on the rear panel of the Lynx L-525.

Connect the Power Adapter

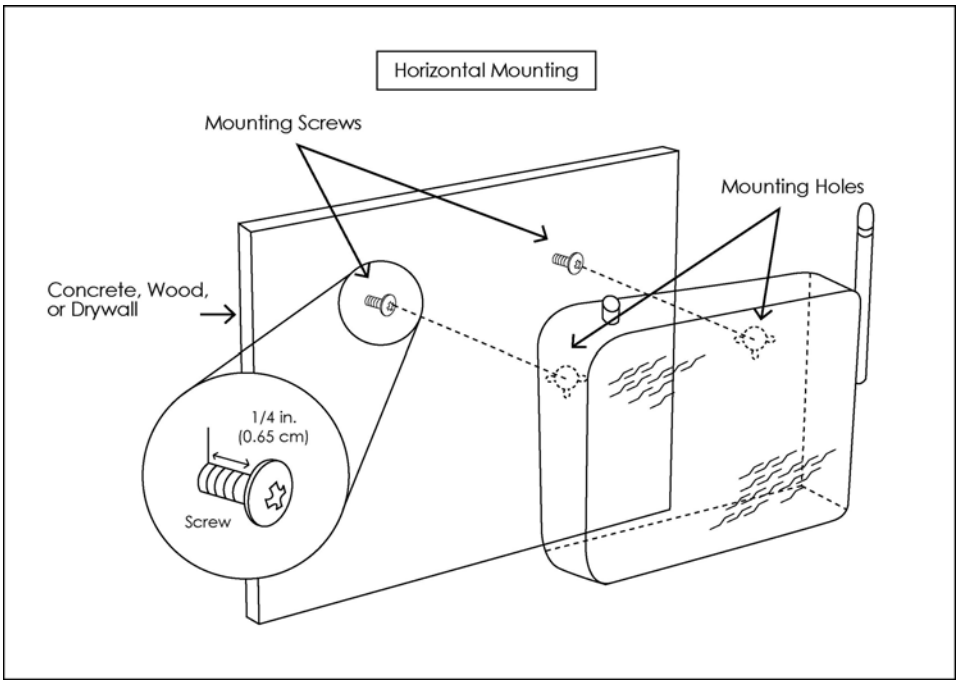
Complete the process by connecting the AC power adapter to the POWER connector on the back of the device and plug the adapter into a wall outlet or power strip. Then turn on and boot up your PC and any LAN devices, such as hubs or switches, and any computers connected to them.

Installation Diagram



Mounting the Lynx L-525

The Lynx L-525 can be mounted on the wall. Mounting can be done on wall material including concrete, wood, or drywall. Select an appropriate location free from obstructions or any possible interference. Make sure the cables can be easily attached to the Lynx L-525 without strain. The illustration below shows how to mount the Lynx L-525 horizontally on a wall.



Configuring Your Computer

Prior to accessing the Lynx L-525 through the LAN port, note the following necessary configurations—

- Your PC's TCP/IP address: 192.168.1.X
- The Lynx L-525's default IP address: **192.168.1.1**
- Subnet mask: 255.255.255.0

Following are the procedures for configuring your computer. Use the instructions for the operating system that you are using.

Windows 2000

1. In the Windows taskbar, click on the **Start** button and point to **Settings, Control Panel**, and **Network and Dial-up Connections** (in that order).
2. Click on **Local Area Connection**. When you have the Local Area Connection Status window open, click on **Properties**.
3. Listed in the window are the installed network components. If the list includes Internet Protocol (TCP/IP), then the protocol has already been enabled, and you can skip to Step 10.
4. If Internet Protocol (TCP/IP) does not appear as an installed component, then click on **Install**.
5. In the Select Network Component Type window, click on protocol and then the **Add** button.
6. Select Internet Protocol (TCP/IP) from the list and then click on **OK**.
7. If prompted to restart your computer with the new settings, click **OK**.
8. After your computer restarts, click on the **Network and Dial-up Connections** icon again, and right click on the **Local Area Connection** icon and then select **Properties**.
9. In the Local Area Connection Properties dialog box, select Internet Protocol (TCP/IP) and then click on **Properties**.
10. In the Internet Protocol (TCP/IP) Properties dialog box, click in the radio button labeled **Use the following IP address** and type

192.168.1.x (where x is any number between 2 and 254) and 255.255.255.0 in the IP address field and Subnet Mask field.

11. Click on **OK** twice to save your changes and then close the **Control Panel**.

Windows XP

1. In the Windows taskbar, click on the **Start** button and point to **Settings** and then click **Network Connections.**

2. In the Network Connections window, right click on the **Local Area Connection** icon and click on **Properties.**

3. Listed in the Local Area Connection window are the installed network components. Make sure the box for Internet Protocol (TCP/IP) is checked and then click on **Properties**.

4. In the Internet Protocol (TCP/IP) Properties dialog box, click in the radio button labeled **Use the following IP address** and type 192.168.1.x (where x is any number between 2 and 254) and 255.255.255.0 in the IP address field and Subnet Mask field.

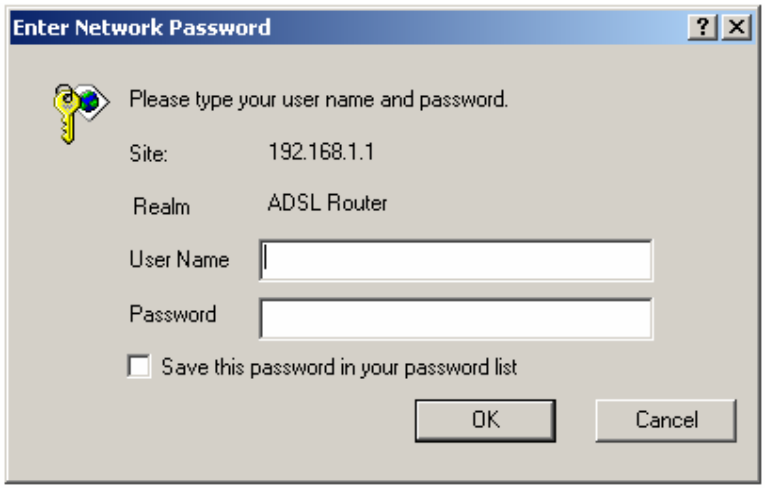
5. Click on **OK** twice to save your changes and then close the **Control Panel**.

Logging into the Lynx L-525

This section explains how to log in to your Lynx L-525 using the following steps—

1. Launch your web browser.
2. Enter the URL **http://192.168.1.1** in the address bar and click on **Enter**.

A login screen like the one below will be displayed after you connect to the user interface.



3. Enter your user name and password, and then click on **OK** to display the user interface.

NOTE: There are two default user name and password combinations. The user / user name and password combination can display device status, but cannot change or save configurations. The admin / admin combination can perform all functions. Passwords can be changed at any time.

Device Info

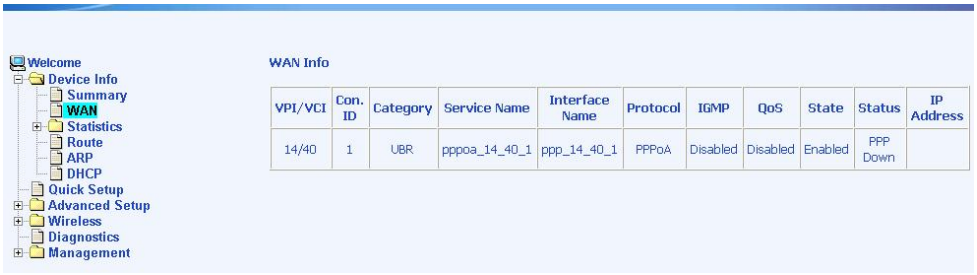
This section describes the system information that can be accessed using the menu items under Device Info.

Summary

Access the general status report from the Lynx L-525 by clicking on "**Summary**" under "**Device Info**". It shows information about the Lynx L-525 such as the version of the software, bootloader, etc. It also displays the current status of your DSL connection as shown below—

WAN

Access the WAN status report from the Lynx L-525 by clicking on "**WAN**" under "**Device Info**".



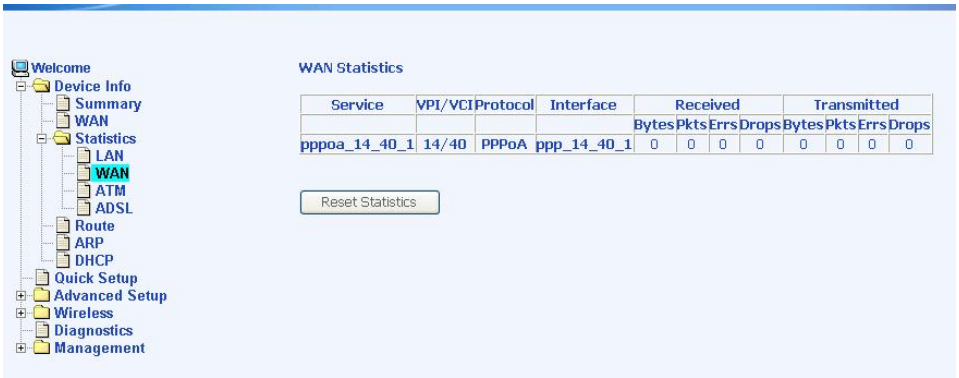
Statistics

LAN Statistics

Access the LAN statistics from the Lynx L-525 by clicking on the **"LAN"** item under **"Statistics".**

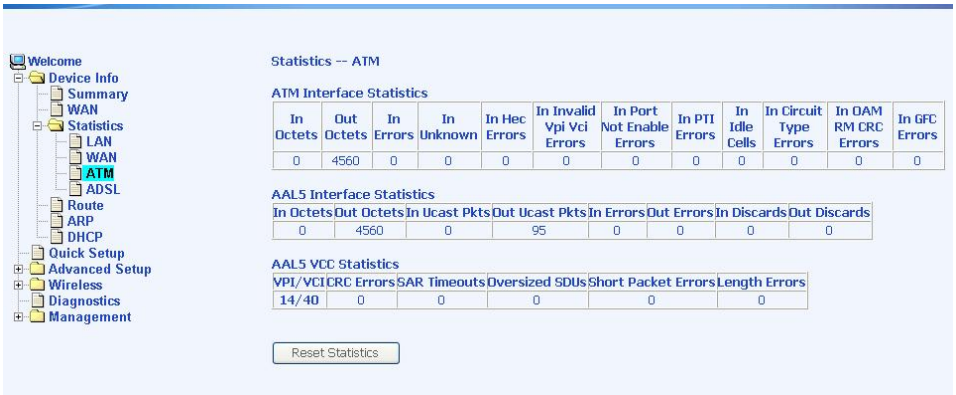
WAN Statistics

Access the WAN statistics from the Lynx L-525 by clicking on the "**WAN**" item under "**Statistics**". The screen below shows a PPPoA WAN connection example.



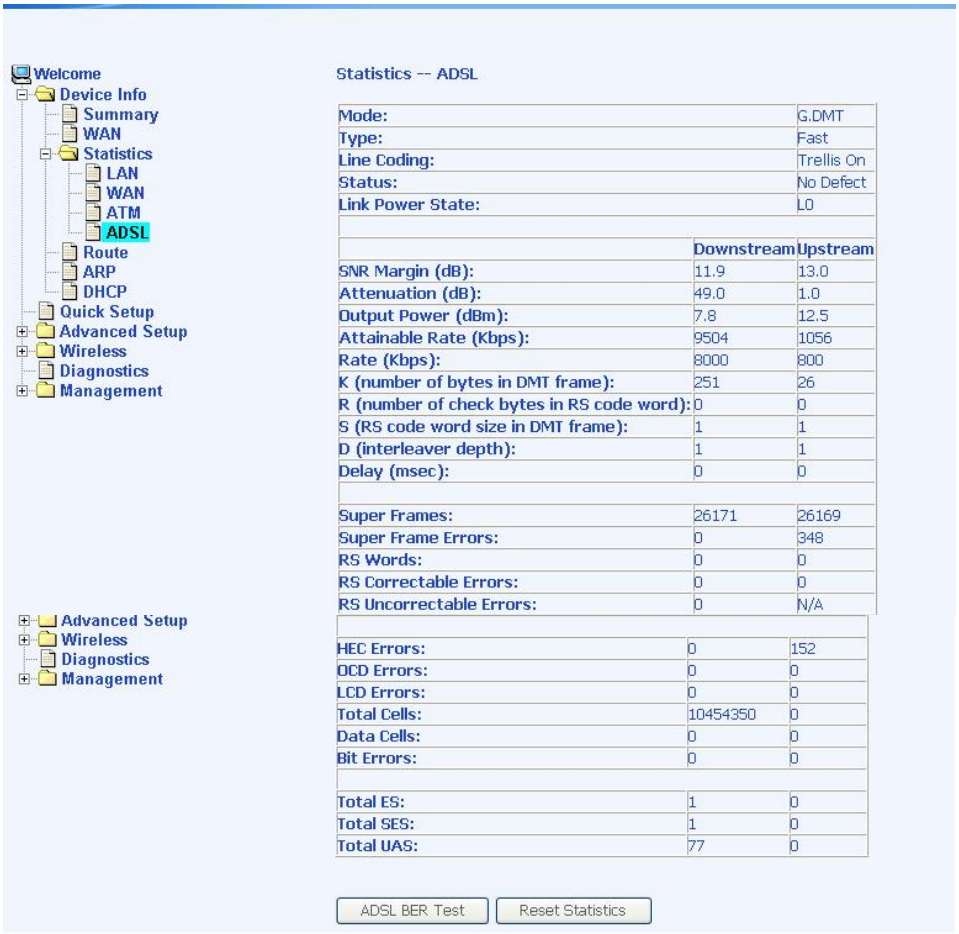
ATM Statistics

Access ATM statistics from the Lynx L-525 by clicking on the "**ATM**" item under "**Statistics**".



ADSL Statistics

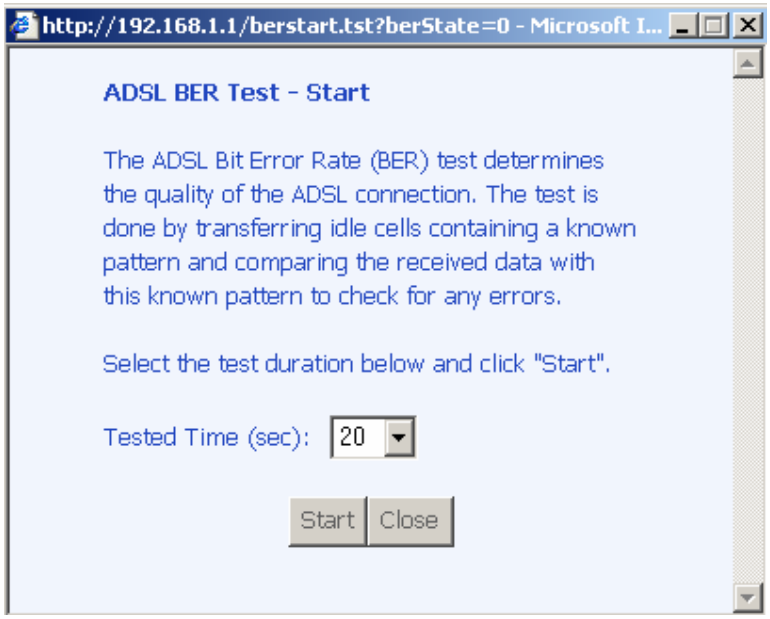
You can view ADSL statistics by clicking on the "**ADSL**" item under "**Statistics**". Information contained in this screen is useful for troubleshooting and diagnostics of connection problems.



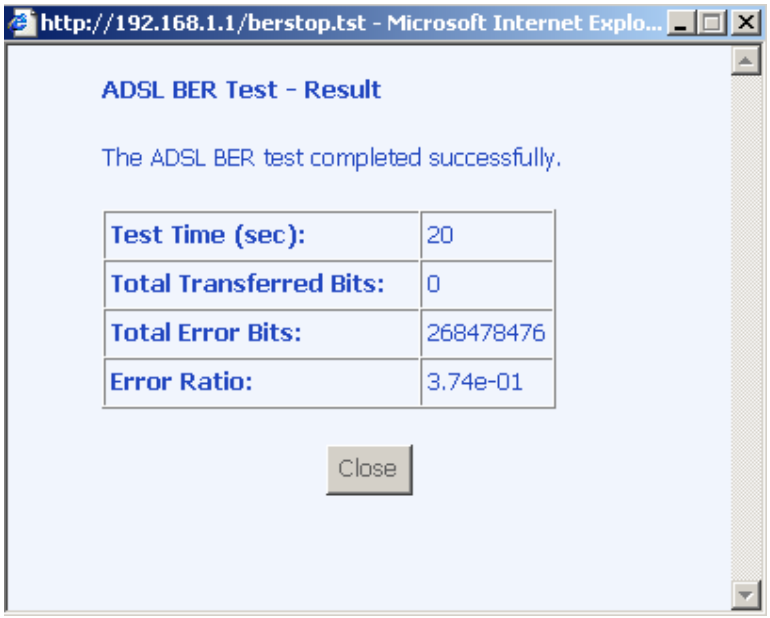
ADSL BER Test

A **Bit Error Rate Test (BER Test)** is a test that reflects the ratio of error bits to the total number transmitted.

If you click on the **ADSL BER Test** button at the bottom of the ADSL Statistics page, the following pop-up screen will appear allowing you to set the tested time and to begin the test.


http://192.168.1.1/berstart.tst?berState=0 - Microsoft I...
ADSL BER Test - Start
The ADSL Bit Error Rate (BER) test determines the quality of the ADSL connection. The test is done by transferring idle cells containing a known pattern and comparing the received data with this known pattern to check for any errors.
Select the test duration below and click "Start".
Tested Time (sec):
20
Start
Close

Below is an ADSL BER Test result screen displaying information about the test including the error bits and ratio.


http://192.168.1.1/berstop.tst - Microsoft Internet Explo...
ADSL BER Test - Result
The ADSL BER test completed successfully.
Test Time (sec): 20
Total Transferred Bits: 0
Total Error Bits: 268478476
Error Ratio: 3.74e-01
Close

Route

Access the routing status report from the Lynx L-525 by clicking on the "**Route**" item under "**Device Info**".

ARP

Access the ARP status report from the Lynx L-525 by clicking on the "**ARP**" item under "**Device Info**".

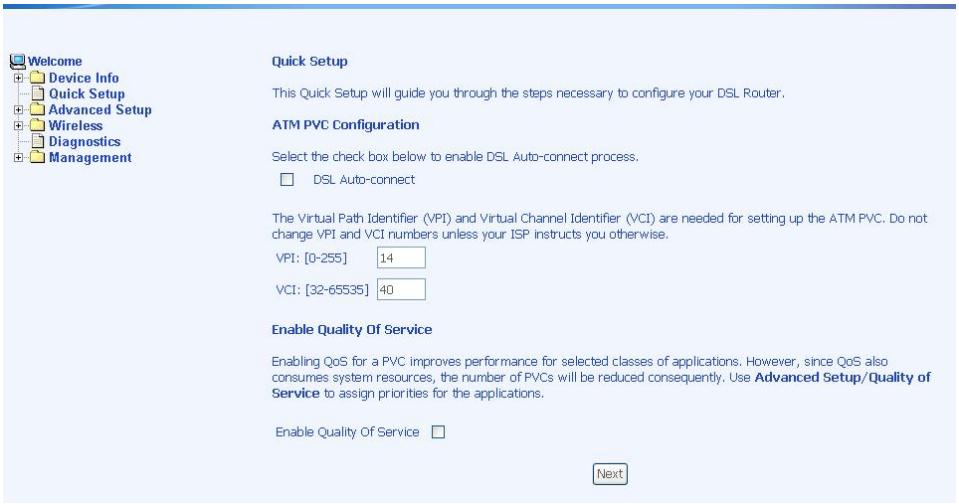
Quick Setup

This section will explain how to quickly configure the Lynx L-525 for the main purpose of connecting to the Internet. For information on how to configure any advanced functions, please go the Advanced Setup section (page 22)

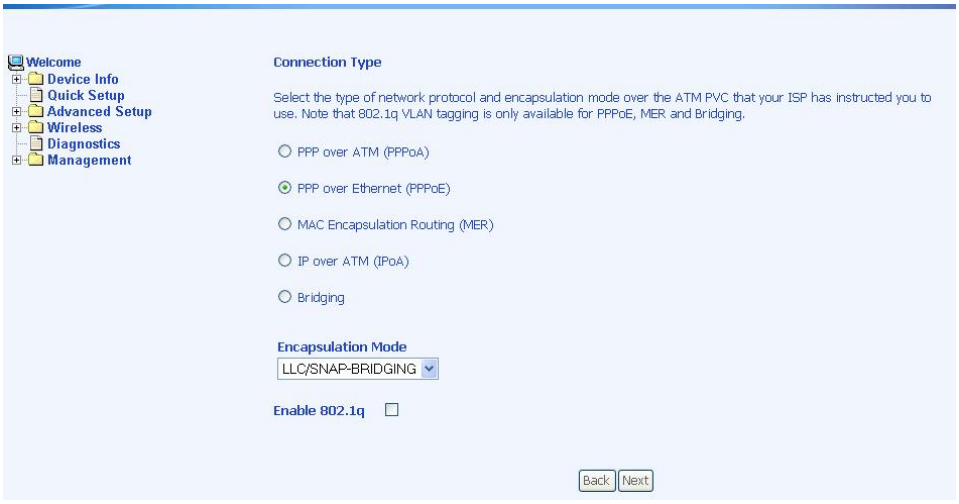
ATM PVC Configuration

To enable the auto-connect process, click on the box labeled **DSL Auto-connect**, a process that will automatically detect the first usable PVC and automatically detect PPPoE, PPPoA, and Bridge Protocol (with DHCP Server available). To continue, click on the **Next** button.

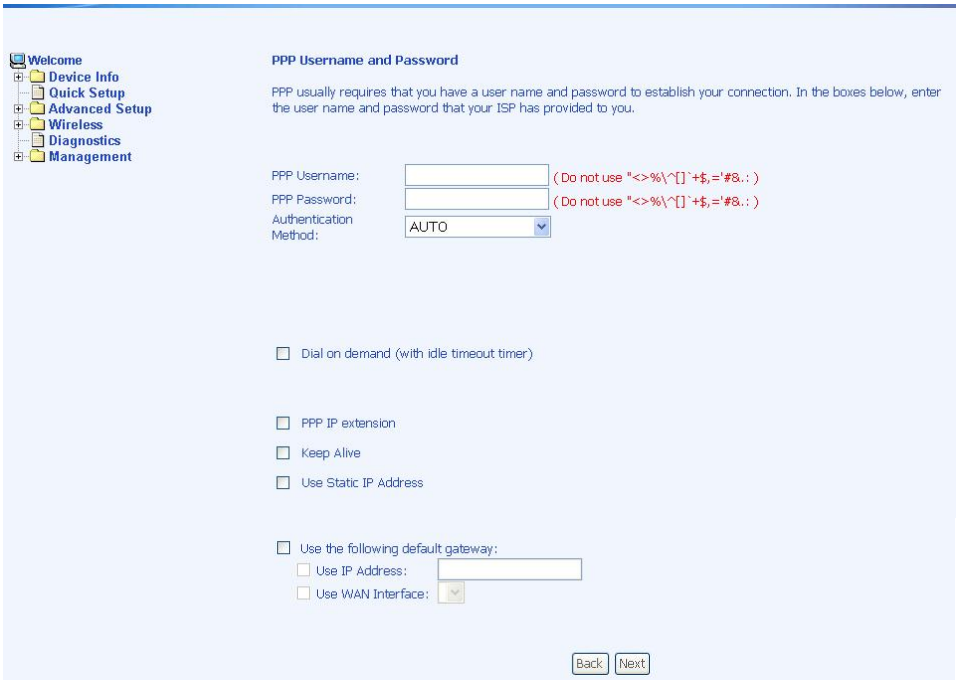
If you do not use DSL Auto-connect, then you may need to change the VPI and VCI numbers. Quality of service can also be enabled on this screen.


Welcome
Device Info
Quick Setup
Advanced Setup
Wireless
Diagnostics
Management
Quick Setup
This Quick Setup will guide you through the steps necessary to configure your DSL Router.
ATM PVC Configuration
Select the check box below to enable DSL Auto-connect process.
DSL Auto-connect
The Virtual Path Identifier (VPI) and Virtual Channel Identifier (VCI) are needed for setting up the ATM PVC. Do not change VPI and VCI numbers unless your ISP instructs you otherwise.
VPI: [0-255] 14
VCI: [32-65535] 40
Enable Quality Of Service
Enabling QoS for a PVC improves performance for selected classes of applications. However, since QoS also consumes system resources, the number of PVCs will be reduced consequently. Use Advanced Setup/Quality of Service to assign priorities for the applications.
Enable Quality Of Service
Next

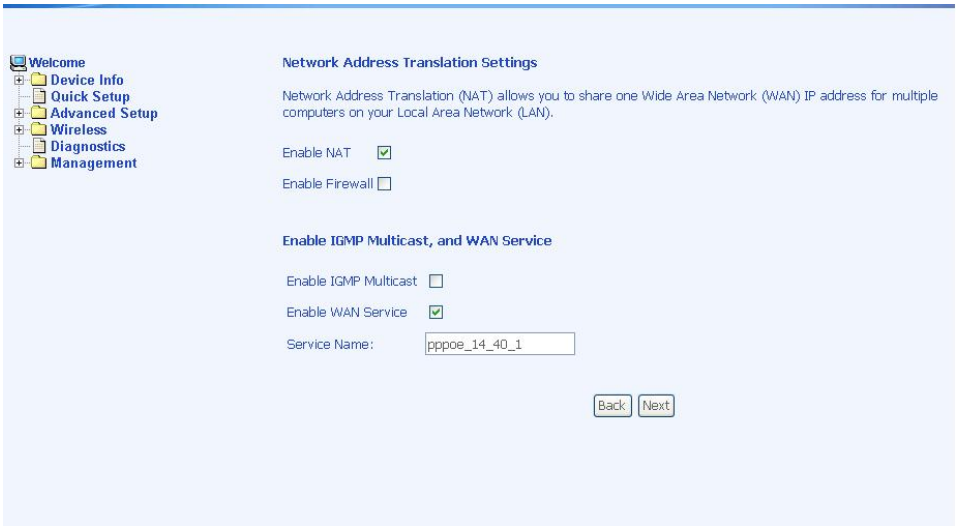
Furthermore, if you do not use DSL Auto-connect, then you will need to select the connection type and encapsulation mode from a list as shown below.



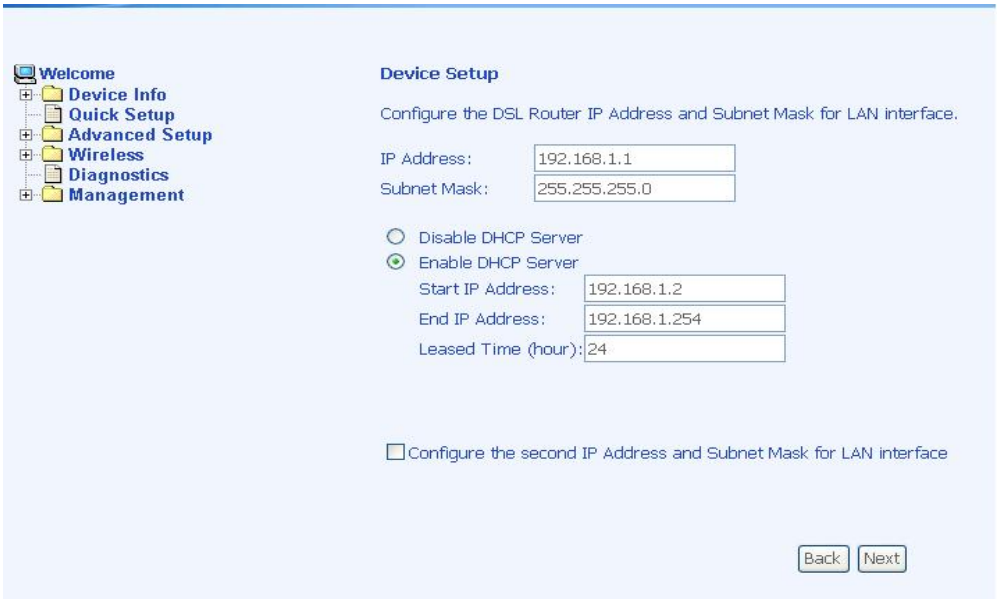
The next screen to appear will depend on the connection type that was selected in the previous screen.



The next screen lets you decide if you want to enable NAT, firewall, IGMP multicast, and WAN service.



The following is the Device Setup screen where you enter the IP address / subnet mask as well as enable or disable DHCP server.



The last screen under the Quick Start section allows you to set up the wireless feature of the Lynx L-525.

When you click on **Next**, the summary screen shows the settings selected under WAN setup.

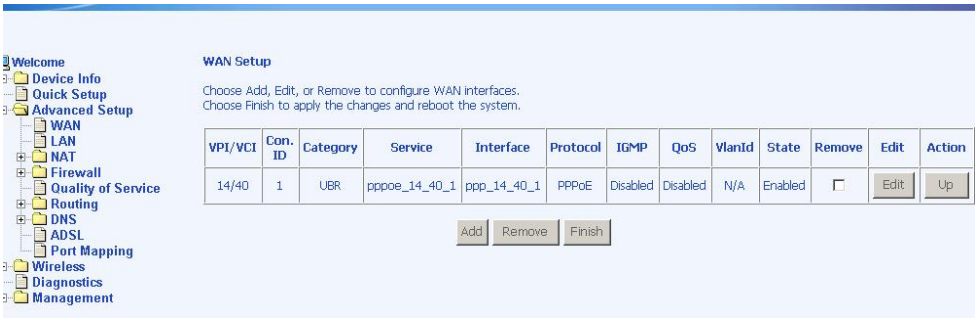
Welcome
Device Info
Quick Setup
Advanced Setup
Wireless
Diagnostics
Management
WAN Setup - Summary
Make sure that the settings below match the settings provided by your ISP.
VPI / VCI: 14 / 40
Connection Type: PPPoE
Service Name: pppoe_14_40_1
Service Category: UBR
IP Address: Automatically Assigned
Service State: Enabled
NAT: Enabled
Firewall: Disabled
IGMP Multicast: Disabled
Quality Of Service: Disabled
Click "Save/Reboot" to save these settings and reboot router. Click "Back" to make any modifications.
NOTE: The configuration process takes about 1 minute to complete and your DSL Router will reboot.
Back
Save/Reboot

Advanced Setup

This section of the user manual covers the advanced configurations of the Lynx L-525. The topics under Advanced Setup are *WAN, LAN, NAT, firewall, QoS, routing, DNS, ADSL,* and *port mapping.*

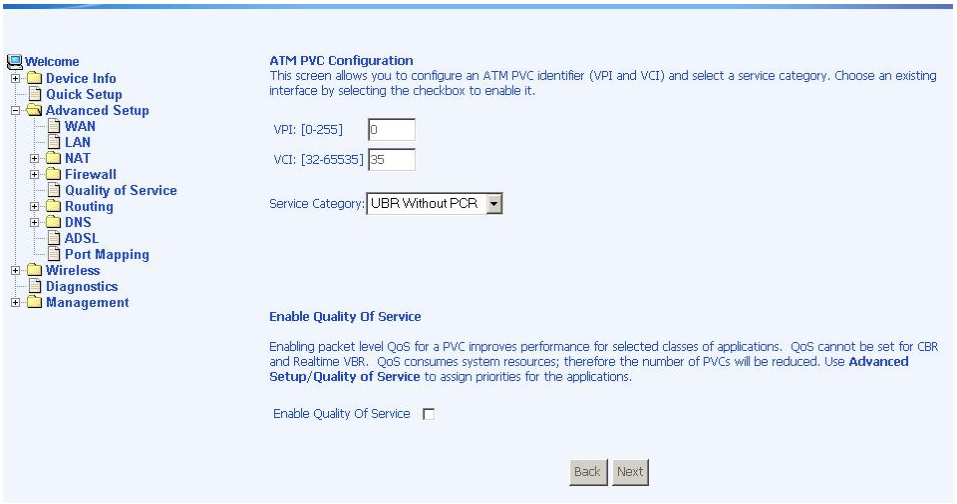
WAN

Configure the WAN settings as provided by your ISP.



Click on the **Add** button if you want to add a new rule for the WAN interface. The ATM PVC Configuration screen appears.

The ATM PVC Configuration screen allows you to configure an ATM PVC identifier (VPI and VCI) and select a service category.


Welcome
Device Info
Quick Setup
Advanced Setup
WAN
LAN
NAT
Firewall
Quality of Service
Routing
DNS
ADSL
Port Mapping
Wireless
Diagnostics
Management
ATM PVC Configuration
This screen allows you to configure an ATM PVC identifier (VPI and VCI) and select a service category. Choose an existing interface by selecting the checkbox to enable it.
VPI: [0-255]
0
VCI: [32-65535]
35
Service Category:
UBR Without PCR
Enable Quality Of Service
Enabling packet level QoS for a PVC improves performance for selected classes of applications. QoS cannot be set for CBR and Realtime VBR. QoS consumes system resources; therefore the number of PVCs will be reduced. Use Advanced Setup/Quality of Service to assign priorities for the applications.
Enable Quality Of Service
Back
Next

Verify the following values with your ISP before you change them.

- **VPI:** Virtual Path Identifier. The valid range is 0 to 255.
- **VCI:** Virtual Channel Identifier. The valid range is 32 to 65535.
- **Service Category:** Five classes of traffic are listed—

- UBR Without PCR
- UBR With PCR
- CBR
- Non Realtime VBR
- Realtime VBR

Enabling QoS for a PVC improves performance for selected classes of applications. However, since QoS also consumes system resources, the number of PVCs is reduced. If you want to enable QoS service, click on the **Enable Quality Of Service** check box.

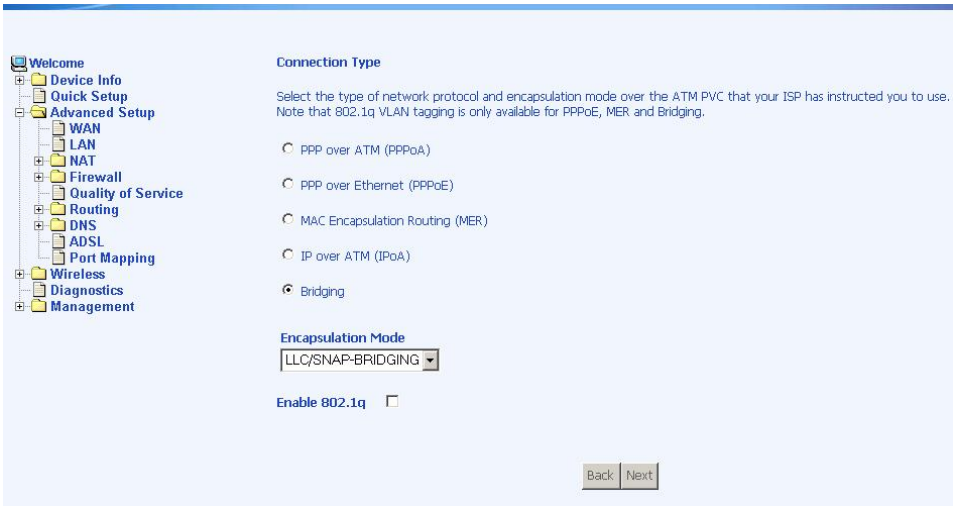
Connection Type

The screen below shows the types of network protocols and encapsulation modes—

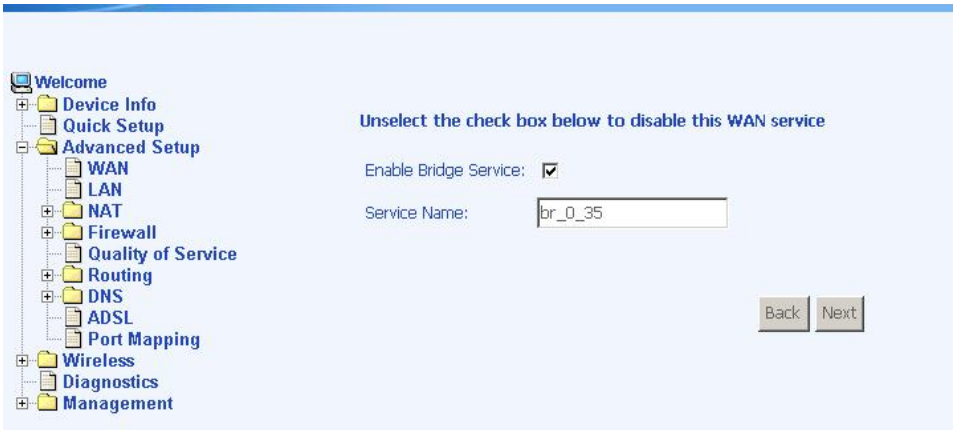
- PPP over ATM (PPPoA)
- PPP over Ethernet (PPPoE)
- MAC Encapsulation Routing (MER)
- IP over ATM (IPoA)
- Bridging

Select the mode that your ISP has instructed you to use and click on **Next**.

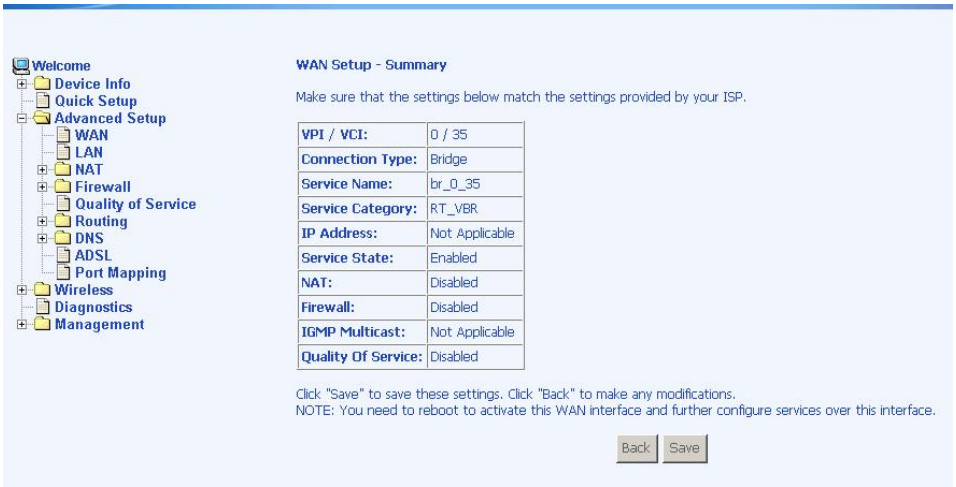
Also available is the option to enable 802.1q, a standard to allow multiple bridged networks to transparently share the same physical network link without leakage of information between networks (i.e. "trunking"). Click on the checkbox if you wish to enable this function.



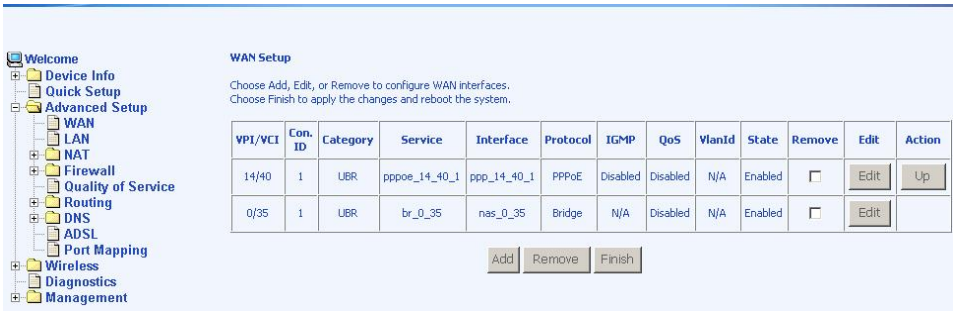
After you click on **Next**, the following screen appears allowing you disable the bridge service if desired.



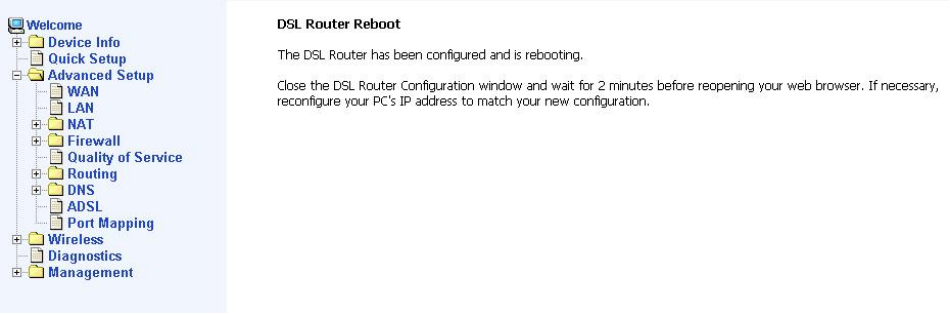
When the settings are complete, the next screen shows a **WAN Setup – Summary** screen displaying the WAN configurations selected.



Click on the **Save** button when the settings are correct. The screen below will appear showing the WAN settings that you made. When satisfied with the settings, and no changes are necessary, click on the **Finish** button. To remove any settings, click on the **Remove** button.

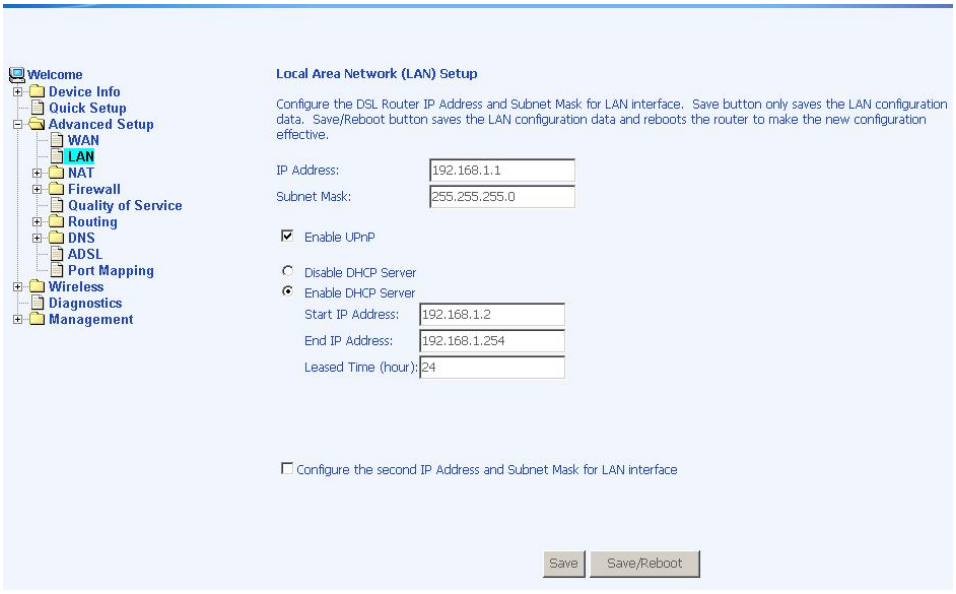


After selecting the **Finish** button, the following screen will appear. At this point, the Lynx L-525 will reboot automatically to save the changes made.


Welcome
Device Info
Quick Setup
Advanced Setup
WAN
LAN
NAT
Firewall
Quality of Service
Routing
DNS
ADSL
Port Mapping
Wireless
Diagnostics
Management
DSL Router Reboot
The DSL Router has been configured and is rebooting.
Close the DSL Router Configuration window and wait for 2 minutes before reopening your web browser. If necessary, reconfigure your PC's IP address to match your new configuration.

LAN Local Area Network (LAN) Setup

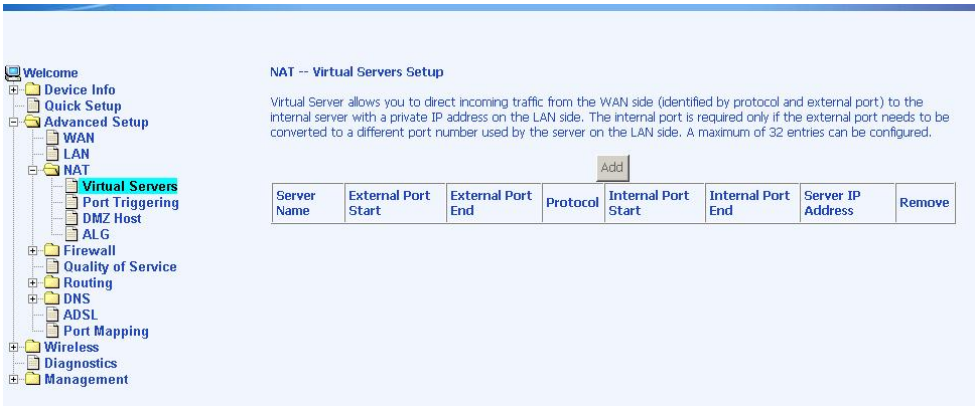
You can configure the DSL Lynx L-525 IP address and Subnet Mask for the LAN interface to correspond to your LAN's IP Subnet. The **Save** button only saves the LAN configuration data, but does not apply the configurations. Select the **Save/Reboot** button to save the LAN configuration data and reboot the Lynx L-525 and apply the new configurations.



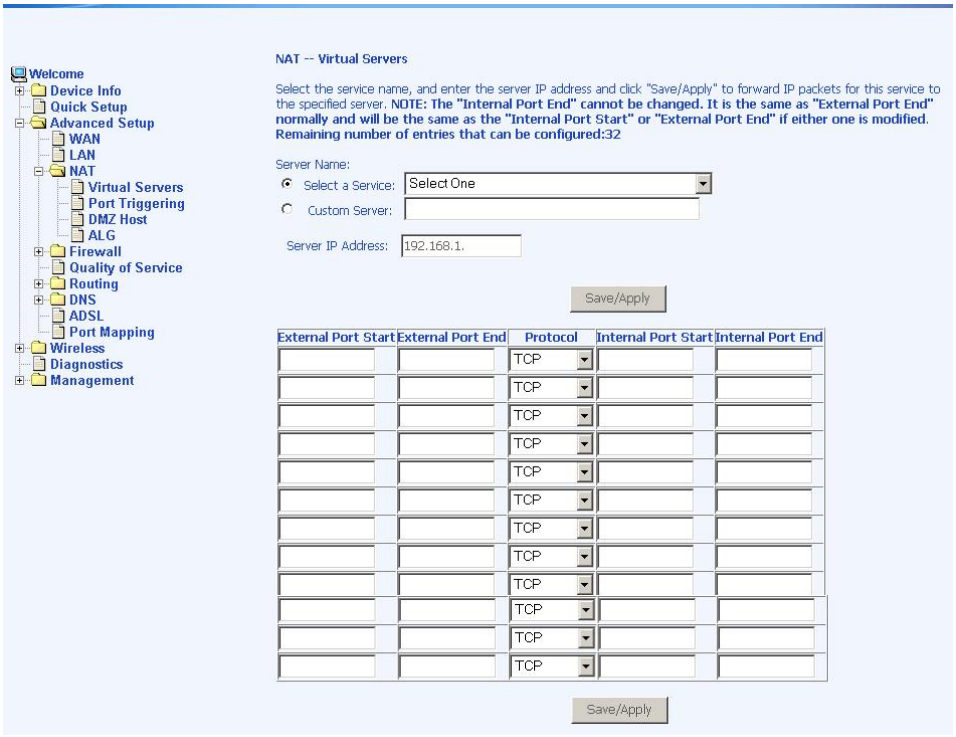
NAT

If you enable NAT (Network Address Translation), you can configure the Virtual Server, Port Triggering, and DMZ Host.

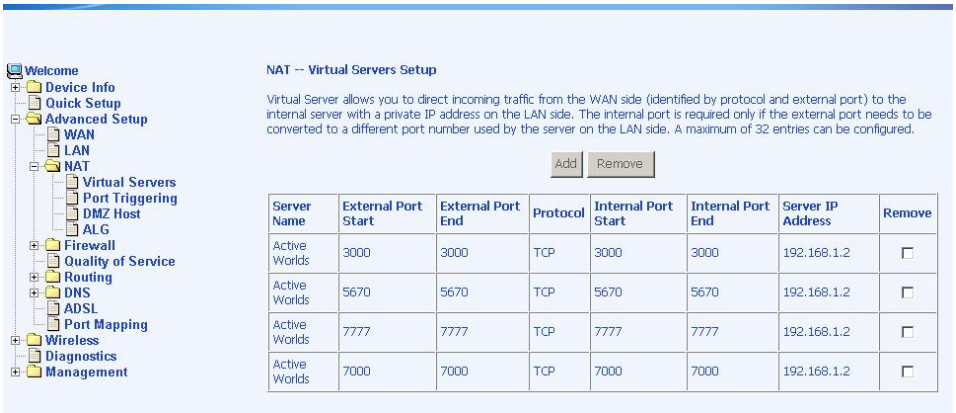
Virtual Servers



A virtual server allows you to direct incoming traffic from the WAN side to a specific IP address on the LAN side. Select the virtual server from the drop-down list and complete the server IP address, then click on the **Save / Apply** button.

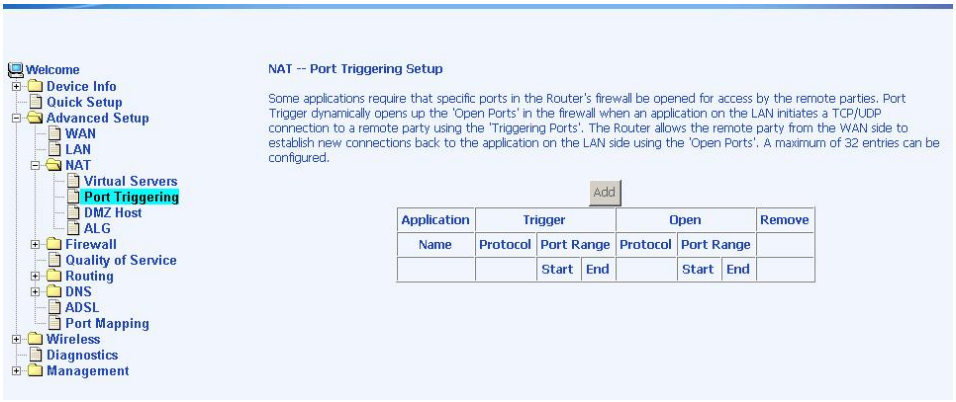


The following screen appears after you save your selection. To add additional virtual servers, click on the **Add** button. If you need to remove any of the server names, select the check box and click on the **Remove** button.

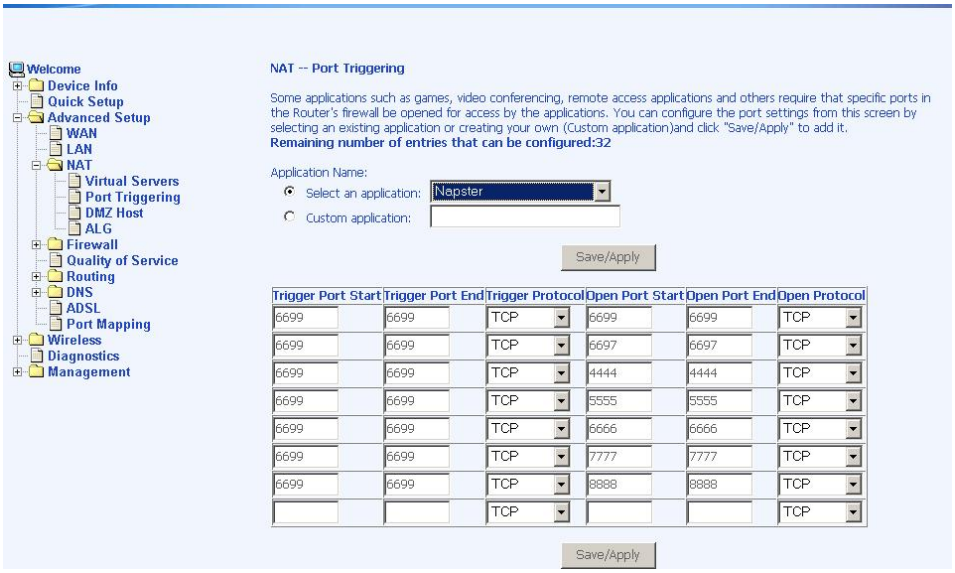

Welcome
Device Info
Quick Setup
Advanced Setup
WAN
LAN
NAT
Virtual Servers
Port Triggering
DMZ Host
ALG
Firewall
Quality of Service
Routing
DNS
ADSL
Port Mapping
Wireless
Diagnostics
Management
NAT -- Virtual Servers Setup
Virtual Server allows you to direct incoming traffic from the WAN side (identified by protocol and external port) to the internal server with a private IP address on the LAN side. The internal port is required only if the external port needs to be converted to a different port number used by the server on the LAN side. A maximum of 32 entries can be configured.
Add
Remove
Server Name
External Port Start
External Port End
Protocol
Internal Port Start
Internal Port End
Server IP Address
Remove
Active Worlds 3000 3000 TCP 3000 3000 192.168.1.2
Active Worlds 5670 5670 TCP 5670 5670 192.168.1.2
Active Worlds 7777 7777 TCP 7777 7777 192.168.1.2
Active Worlds 7000 7000 TCP 7000 7000 192.168.1.2

Port Triggering

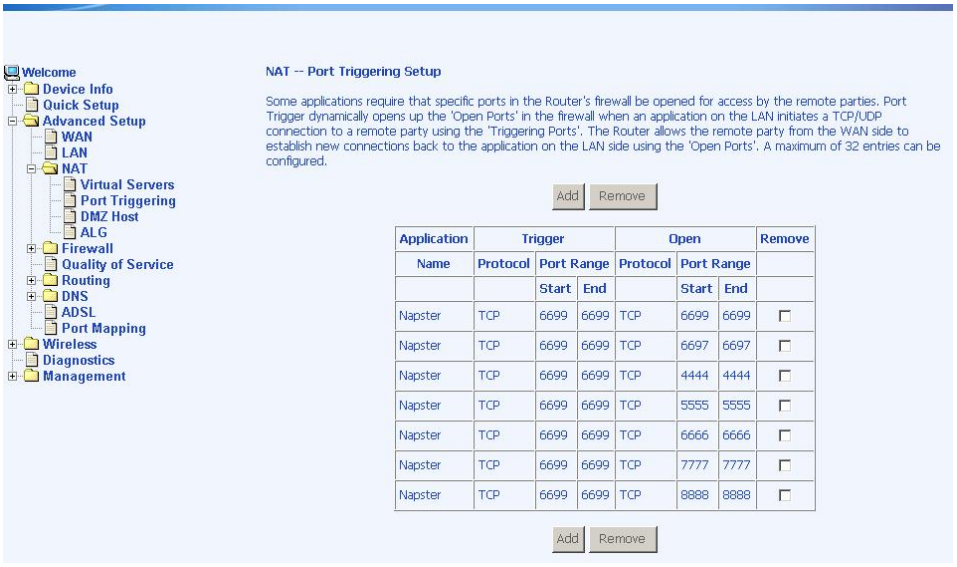
Click on the **Add** button to add Port Triggering to your Internet application.



The screen below appears when you click on **Add,** allowing you to select the application, which requires port setting. After a selection has been made, click on the **Save / Apply** button.



The screen below appears after you save your selections. You will be able to add or remove selections made, by clicking on the **Add** and **Remove** buttons.

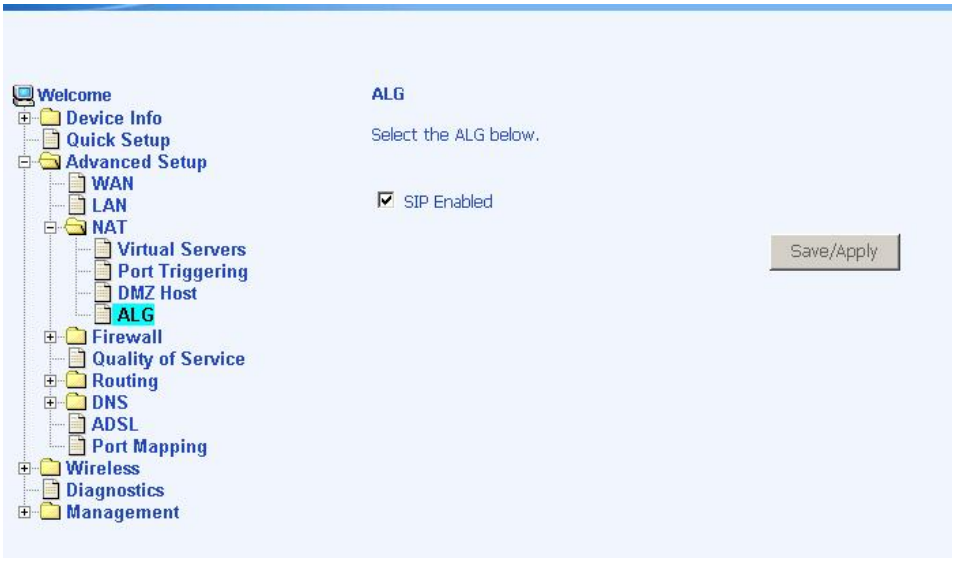

Welcome
Device Info
Quick Setup
Advanced Setup
WAN
LAN
NAT
Virtual Servers
Port Triggering
DMZ Host
ALG
Firewall
Quality of Service
Routing
DNS
ADSL
Port Mapping
Wireless
Diagnostics
Management
NAT -- Port Triggering Setup
Some applications require that specific ports in the Router's firewall be opened for access by the remote parties. Port Trigger dynamically opens up the 'Open Ports' in the firewall when an application on the LAN initiates a TCP/UDP connection to a remote party using the 'Triggering Ports'. The Router allows the remote party from the WAN side to establish new connections back to the application on the LAN side using the 'Open Ports'. A maximum of 32 entries can be configured.
Add
Remove
Application Name
Trigger Protocol
Trigger Port Range Start
Trigger Port Range End
Open Protocol
Open Port Range Start
Open Port Range End
Remove
Napster TCP 6699 6699 TCP 6699 6699
Napster TCP 6699 6699 TCP 6697 6697
Napster TCP 6699 6699 TCP 4444 4444
Napster TCP 6699 6699 TCP 5555 5555
Napster TCP 6699 6699 TCP 6666 6666
Napster TCP 6699 6699 TCP 7777 7777
Napster TCP 6699 6699 TCP 8888 8888
Add
Remove

DMZ Host

You can define the IP address of the DMZ Host on this screen. Enter the IP address and click on **Save / Apply**.

Application Layer Gateway (ALG)

The application layer is a window between various application processes to allow open information exchange. To use the Application Layer Gateway (ALG), the appropriate Application Layer Gateway definition was selected in the service configuration item.



Firewall

IP Filtering–Outgoing

The outgoing filter will block the LAN traffic from entering the WAN side. Click on the **Add** button to create filters.

The screen below will appear when you click on **Add**. Input the filter name, source information (from the LAN side), and destination information (from the WAN side). Then click on **Save / Apply**.

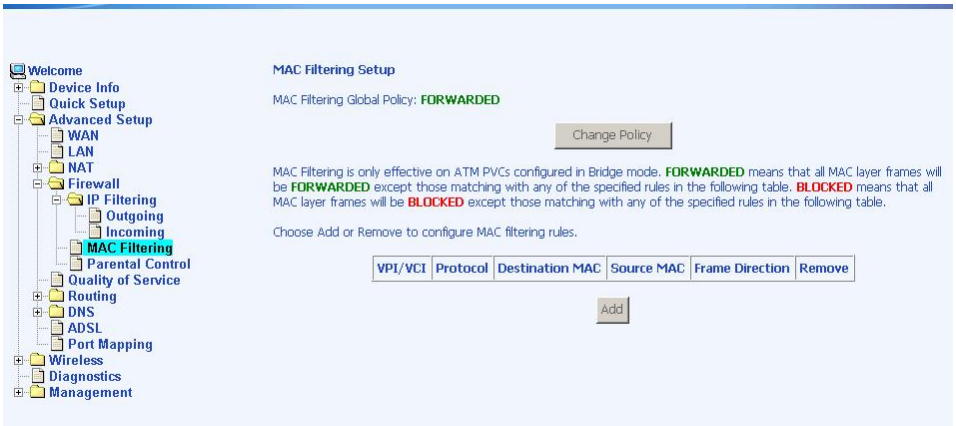
IP Filtering–Incoming

Incoming filter filters the WAN traffic to the LAN side. Click on the **Add** button to add incoming filter settings.

Enter a filter name, information about the source address (from the WAN side), and information about the destination address (to the LAN side). Select the protocol and WAN interface, and then click on **Save/Apply** to add the setting.

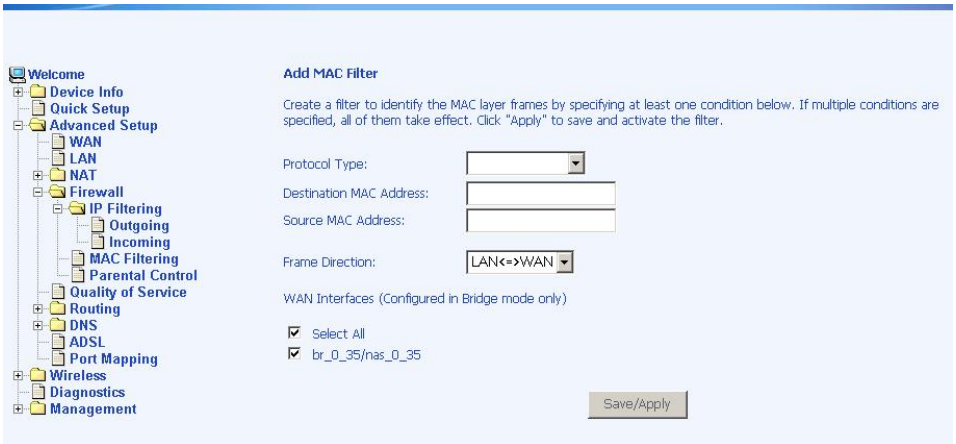
MAC Filtering

MAC filtering can forward or block traffic by MAC address. You can change the policy or add settings to the MAC filtering table using the MAC Filtering Setup screen.



If you click on **Change Policy**, a confirmation dialog allows you to verify your change.

If you want to add a setting to the MAC filtering table, enter the Source and Destination MAC address, and select protocol type, frame direction, and WAN interface. Then click on **Save / Apply** to save it.

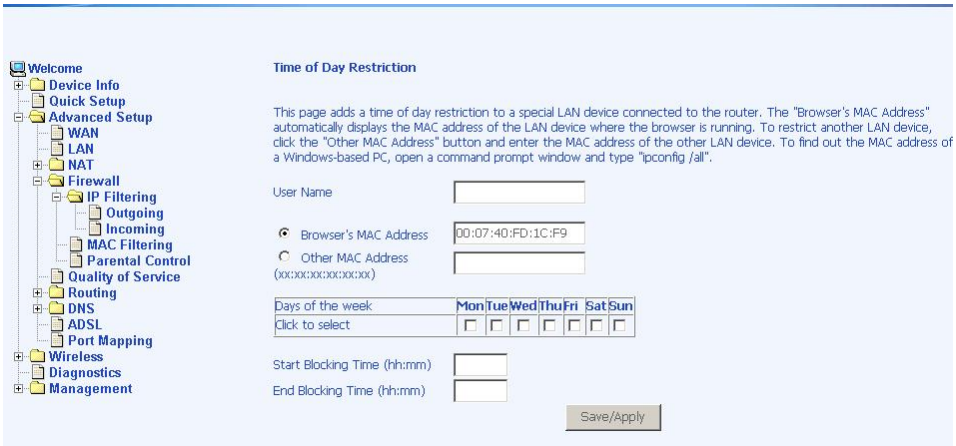


After you save the settings, a screen showing the settings will appear. On this screen you will be able to view and delete MAC filtering rules.

Parental Control

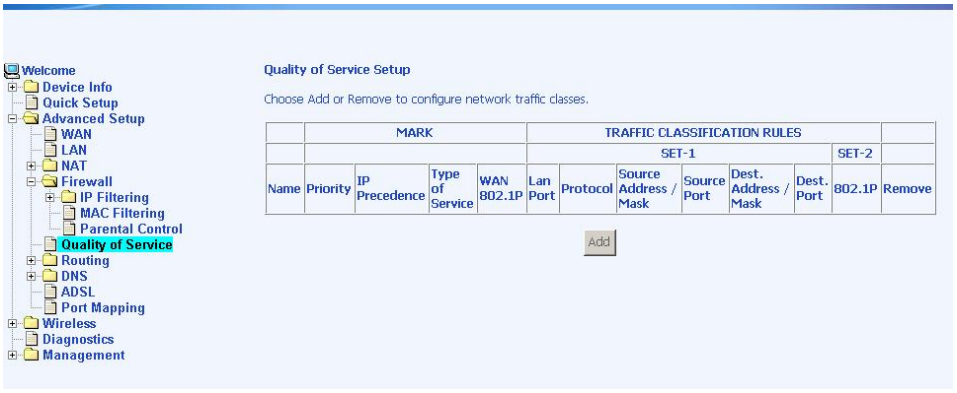
In a home setting, parents can also restrict the day of the week certain computers can access the Lynx L-525. Click on **Add** to set up the restrictions.

After you click on **Add**, you will see the screen below. You will be able to enter the MAC address of the PC that you wish to place on a time-of-day restriction. Click on **Save / Apply** to save the settings and to continue.

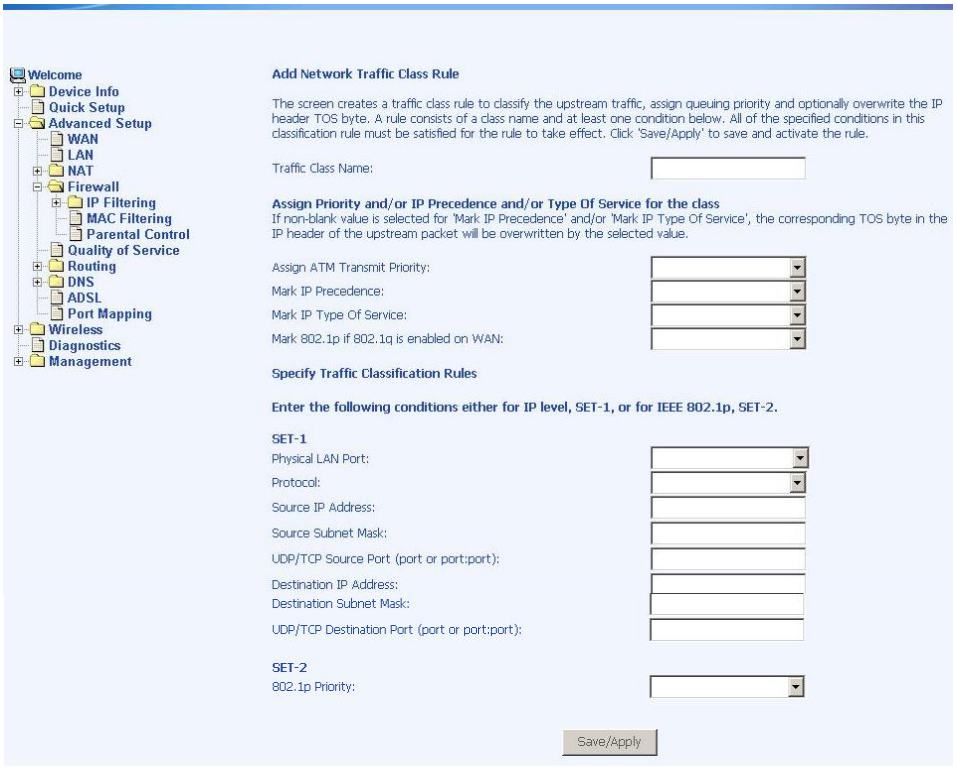

Welcome
Device Info
Quick Setup
Advanced Setup
WAN
LAN
NAT
Firewall
IP Filtering
Outgoing
Incoming
MAC Filtering
Parental Control
Quality of Service
Routing
DNS
ADSL
Port Mapping
Wireless
Diagnostics
Management
Time of Day Restriction
This page adds a time of day restriction to a special LAN device connected to the router. The "Browser's MAC Address" automatically displays the MAC address of the LAN device where the browser is running. To restrict another LAN device, click the "Other MAC Address" button and enter the MAC address of the other LAN device. To find out the MAC address of a Windows-based PC, open a command prompt window and type "ipconfig /all".
User Name
Browser's MAC Address
00:07:40:FD:1C:F9
Other MAC Address
(xx:xx:xx:xx:xx:xx)
Days of the week
Mon Tue Wed Thu Fri Sat Sun
Click to select
Start Blocking Time (hh:mm)
End Blocking Time (hh:mm)
Save/Apply

Quality of Service (QoS)

You can configure the Quality of Service to apply different priorities to traffic on the Lynx L-525.



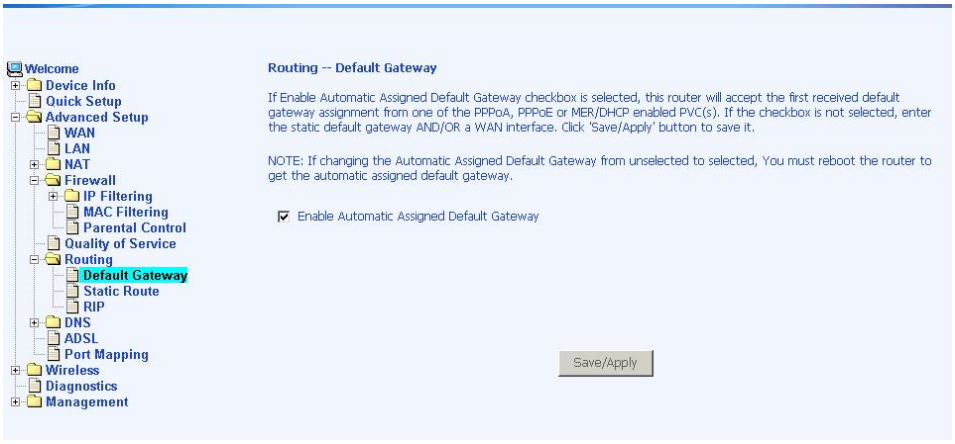
On this screen you can view and delete QoS settings.


Welcome
Device Info
Quick Setup
Advanced Setup
WAN
LAN
NAT
Firewall
IP Filtering
MAC Filtering
Parental Control
Quality of Service
Routing
DNS
ADSL
Port Mapping
Wireless
Diagnostics
Management
Add Network Traffic Class Rule
The screen creates a traffic class rule to classify the upstream traffic, assign queuing priority and optionally overwrite the IP header TOS byte. A rule consists of a class name and at least one condition below. All of the specified conditions in this classification rule must be satisfied for the rule to take effect. Click 'Save/Apply' to save and activate the rule.
Traffic Class Name:
Assign Priority and/or IP Precedence and/or Type Of Service for the class
If non-blank value is selected for 'Mark IP Precedence' and/or 'Mark IP Type Of Service', the corresponding TOS byte in the IP header of the upstream packet will be overwritten by the selected value.
Assign ATM Transmit Priority:
Mark IP Precedence:
Mark IP Type Of Service:
Mark 802.1p if 802.1q is enabled on WAN:
Specify Traffic Classification Rules
Enter the following conditions either for IP level, SET-1, or for IEEE 802.1p, SET-2.
SET-1
Physical LAN Port:
Protocol:
Source IP Address:
Source Subnet Mask:
UDP/TCP Source Port (port or port:port):
Destination IP Address:
Destination Subnet Mask:
UDP/TCP Destination Port (port or port:port):
SET-2
802.1p Priority:
Save/Apply

Routing

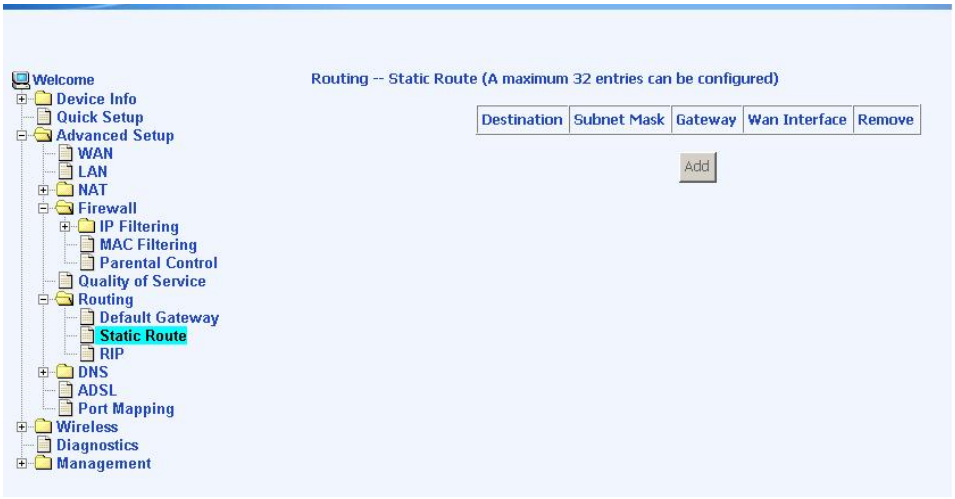
Default Gateway

You can enable automatic assigned default gateway on the Routing – Default Gateway screen. As default, the box is checked for automatic assigned default gateway to be enabled. Click the **Save / Apply** button to enable or disable this feature.

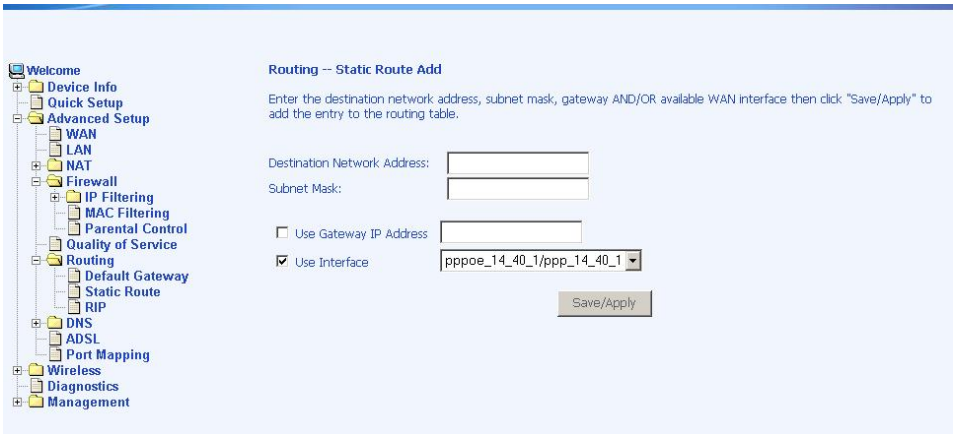

Welcome
Device Info
Quick Setup
Advanced Setup
WAN
LAN
NAT
Firewall
IP Filtering
MAC Filtering
Parental Control
Quality of Service
Routing
Default Gateway
Static Route
RIP
DNS
ADSL
Port Mapping
Wireless
Diagnostics
Management
Routing -- Default Gateway
If Enable Automatic Assigned Default Gateway checkbox is selected, this router will accept the first received default gateway assignment from one of the PPPoA, PPPoE or MER/DHCP enabled PVC(s). If the checkbox is not selected, enter the static default gateway AND/OR a WAN interface. Click 'Save/Apply' button to save it.
NOTE: If changing the Automatic Assigned Default Gateway from unselected to selected, You must reboot the router to get the automatic assigned default gateway.
Enable Automatic Assigned Default Gateway
Save/Apply

Static Route

Use the Routing – Static Route screen to add a static route to the routing table.

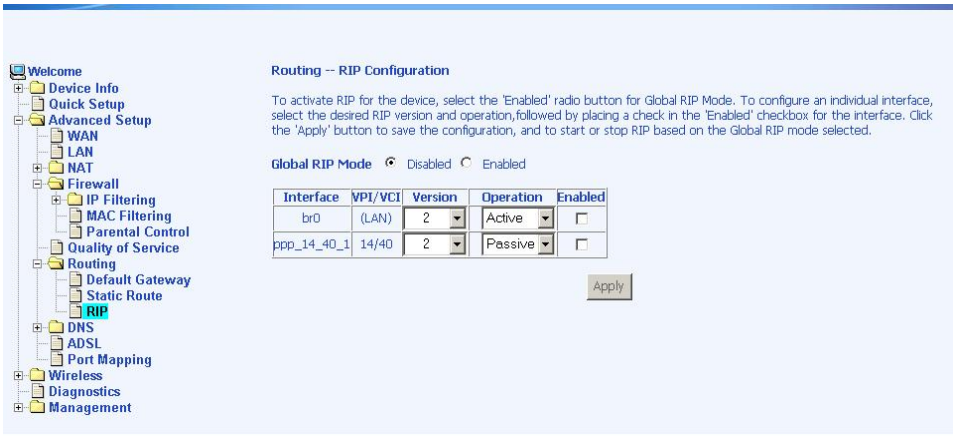


Enter the route information and click on **Save/Apply** to make it active. No reboot is required.



RIP

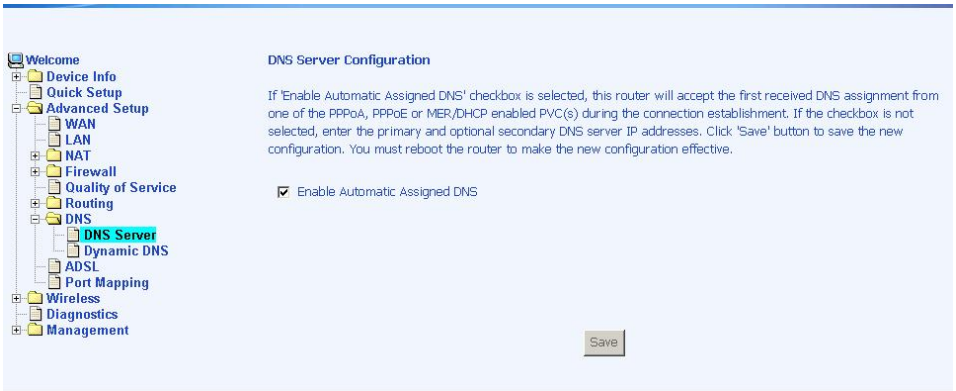
If RIP is enabled, the Lynx L-525 operation can be configured as active or passive.



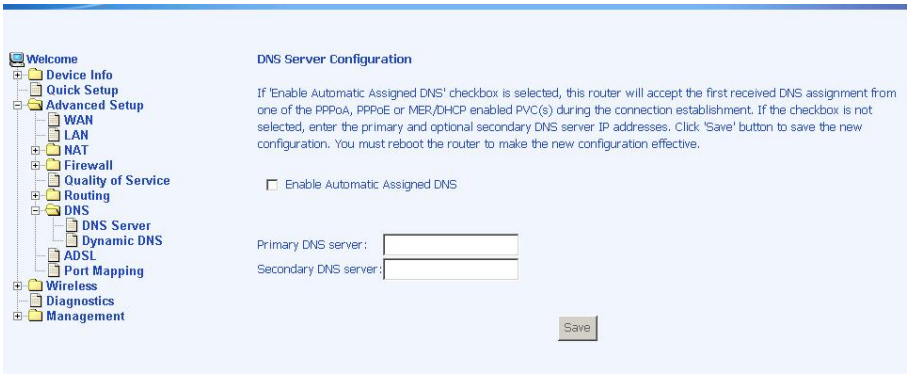
DNS

DNS Server

Use the DNS Server screen to request automatic assignment of a DNS or to specify a primary and secondary DNS.

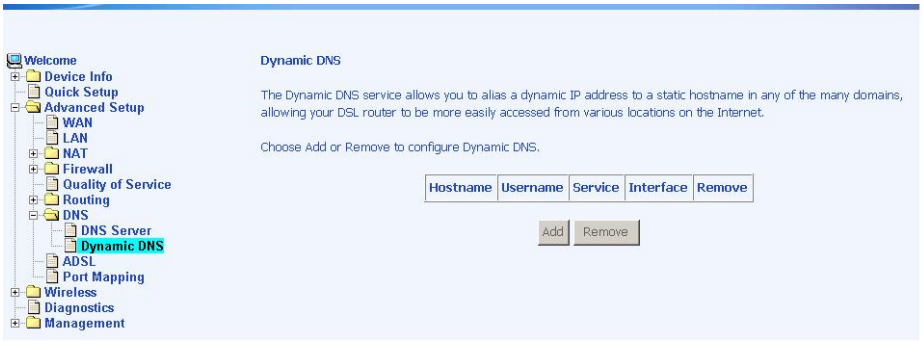

Welcome
Device Info
Quick Setup
Advanced Setup
WAN
LAN
NAT
Firewall
Quality of Service
Routing
DNS
DNS Server
Dynamic DNS
ADSL
Port Mapping
Wireless
Diagnostics
Management
DNS Server Configuration
If 'Enable Automatic Assigned DNS' checkbox is selected, this router will accept the first received DNS assignment from one of the PPPoA, PPPoE or MER/DHCP enabled PVC(s) during the connection establishment. If the checkbox is not selected, enter the primary and optional secondary DNS server IP addresses. Click 'Save' button to save the new configuration. You must reboot the router to make the new configuration effective.
Enable Automatic Assigned DNS
Save

If the automatic assigned DNS checkbox is not selected, then enter the primary and secondary DNS Server IP addresses as illustrated below:


Welcome
Device Info
Quick Setup
Advanced Setup
WAN
LAN
NAT
Firewall
Quality of Service
Routing
DNS
DNS Server
Dynamic DNS
ADSL
Port Mapping
Wireless
Diagnostics
Management
DNS Server Configuration
If 'Enable Automatic Assigned DNS' checkbox is selected, this router will accept the first received DNS assignment from one of the PPPoA, PPPoE or MER/DHCP enabled PVC(s) during the connection establishment. If the checkbox is not selected, enter the primary and optional secondary DNS server IP addresses. Click 'Save' button to save the new configuration. You must reboot the router to make the new configuration effective.
Enable Automatic Assigned DNS
Primary DNS server:
Secondary DNS server:
Save

Dynamic DNS

Dynamic DNS (D-DNS) allows you to have your own permanent domain name linked to your dynamic IP address. To configure a dynamic DNS, click on **Add**. If you have already created a dynamic DNS that you want to delete, click on **Remove**.



The screen below allows you to set up the Dynamic DNS provider. Note that you will have to first register at the Dynamic DNS site that you wish to use. Select from either *DynDNS.org* or *TZO*. Then enter the hostname and the interface to which you want to establish the D-DNS address. Enter the username / password for the D-DNS account that you have signed up for and then click on **Save / Apply**.

ADSL

There are three major items in the ADSL settings:

Modulation Methods

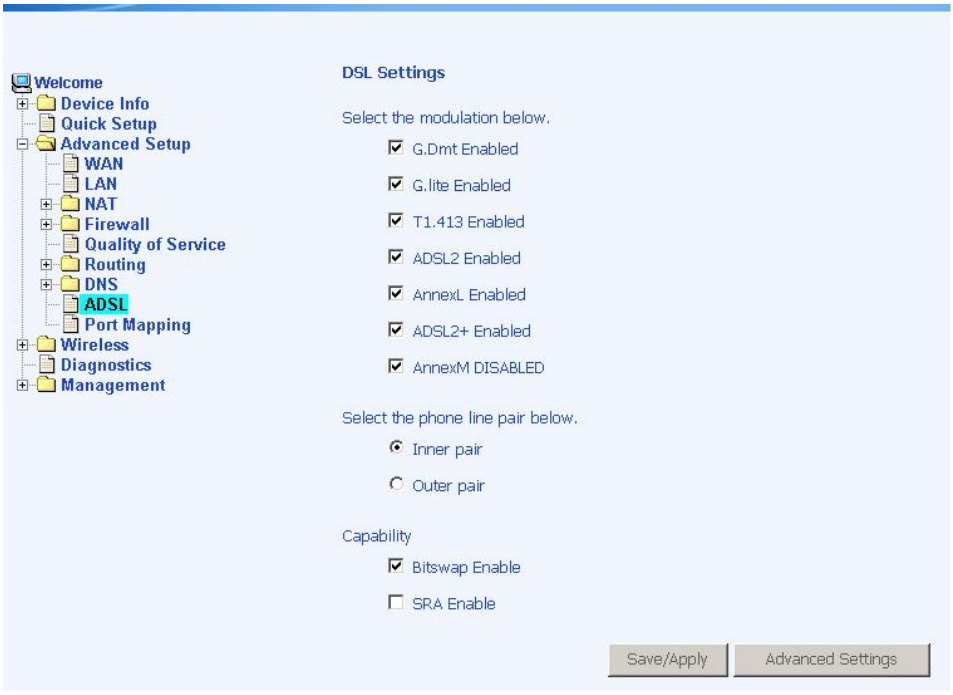
Six modulation methods for different linking speed are supported by the Lynx L-525: G.Dmt Enabled, G.lite Enabled, T1.413 Enabled, ADSL Enabled, Annex L Enabled, and ADSL2+ Enabled. Set this value only as directed by your ISP.

Phone Line Pair

The Lynx L-525 supports phone lines on pins 2 and 3 or pins 1 and 4 to connect your ADSL line. If your phone system uses pins 2 and 3, attach a normal RJ11 cable to the Lynx L-525 and select “Inner pair” on the screen; if your phone system uses pins 1 and 4, attach the phone with the supplied RJ11 cable and select “Outer pair” on the screen.

Capability

Do not change these settings unless directed by your ISP.



DSL Advanced Settings

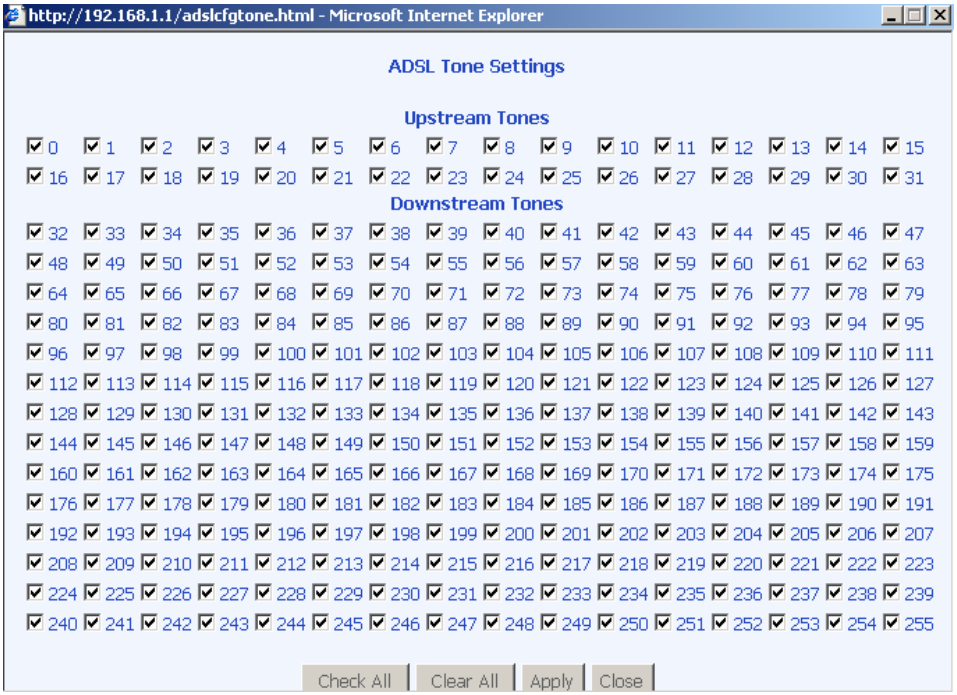
The test mode can be selected from the DSL Advanced Settings page.

Test modes are as follows—

- Normal
- Reverb
- Medley
- No retrain
- L3

Tone Settings

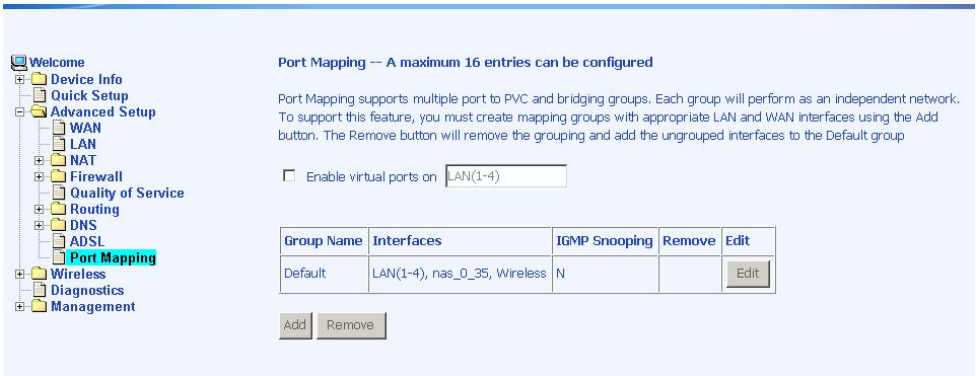
The frequency band of ADSL is split up into 256 separate tones, each spaced 4.3125 kHz apart. With each tone carrying separate data, the technique operates as if 256 separate modems were running in parallel. The tone range is from 0 to 31 for upstream and from 32 to 255 for downstream. Do NOT change these settings unless instructed by your ISP.



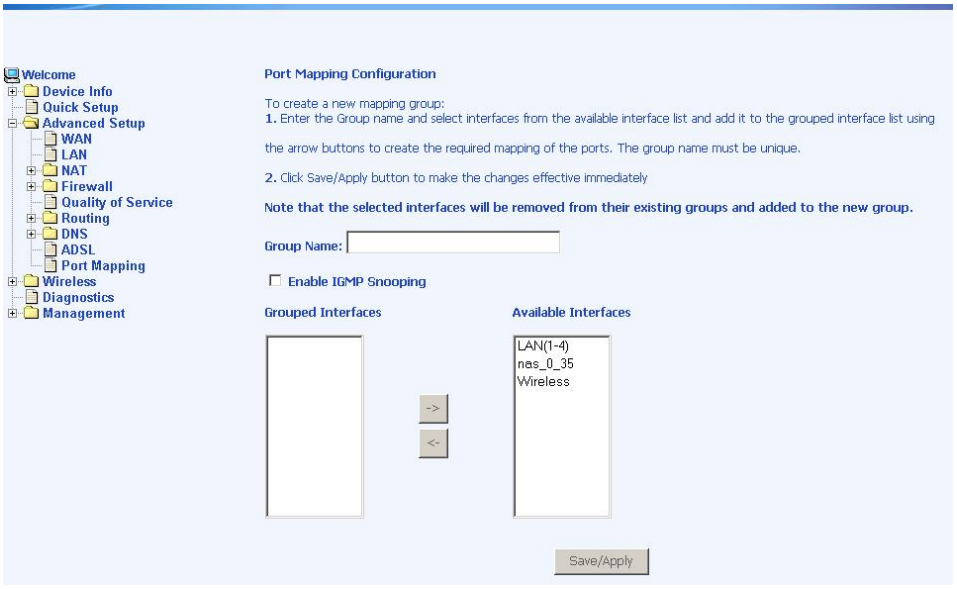
Port Mapping

Port mapping is a feature that allows you to open ports to allow certain Internet applications on the WAN side to pass through the firewall and enter your LAN. To use this feature, mapping groups need to be created. To do this, follow the instructions below –

1. Click on the **Add** button.



2. After clicking the **Add** button, the following configuration screen appears, allowing you enter the groups and the interfaces with which they are associated.



Wireless

This section allows you to configure wireless settings on your Lynx L-525.

Basic

The **Wireless – Basic** screen lets you enable or disable wireless. The default setting for wireless is enabled. You can also hide the access point so others cannot see your ID on the network.

Security

The next screen is the **Wireless – Security** screen which allows you to select the network authentication method and to enable or disable WEP encryption. Note that depending on the network authentication that is selected, the screen will change accordingly so additional fields can be configured for the specific authentication method.

Network authentication methods include the following—

- **Open**—Anyone can access the network. The default is a disabled WEP encryption setting.

- **Shared**—WEP encryption is enabled and encryption key strength of 64-bit or 128-bit needs to be selected. Click on **Set Encryption Keys** to manually set the network encryption keys. Up to 4 different keys can be set and you can come back to select which one to use at anytime.

- **802.1X—**Requires mutual authentication between a client station and the Lynx L-525 by including a RADIUS-based authentication server. Information about the RADIUS server such as its IP address, port and key must be entered. WEP encryption is also enabled and the encryption strength must also be selected.

- **WPA—(Wi-Fi Protected Access)**— Usually used for the larger Enterprise environment, WPA uses a RADIUS server and TKIP (Temporal Key Integrity Protocol) encryption (instead of WEP encryption, which is disabled). TKIP uses128-bit dynamic session keys (per user, per session, and per packet keys).

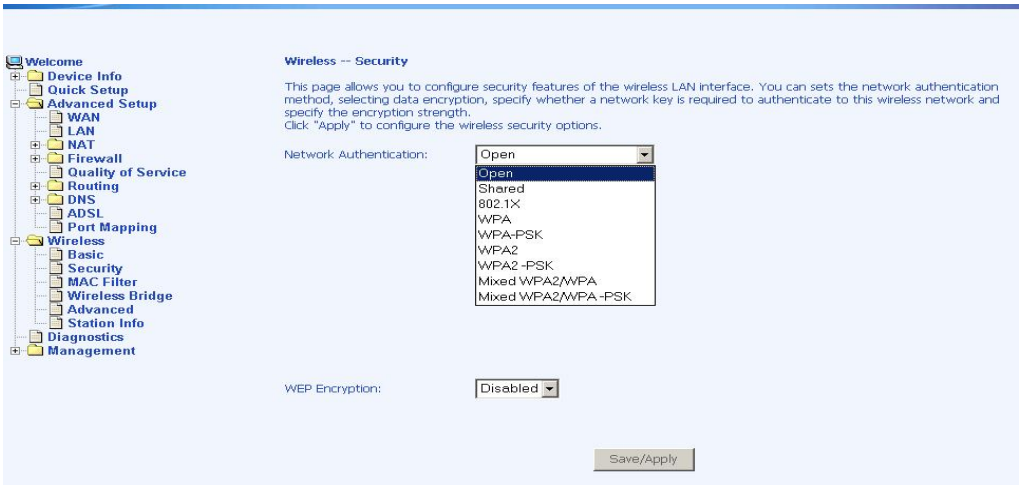
- **WPA-PSK (Wi-Fi Protected Access – Pre-Shared Key)**—WPA for home and SOHO environments also using the same strong TKIP encryption, per-packet key construction, and key management that WPA provides in the enterprise environment. The main difference is that the password is entered manually. A group re-key interval time is also required.

- **WPA2 (Wi-Fi Protected Access 2)**—Second generation of WPA which uses AES (Advanced Encryption Standard) instead of TKIP as its encryption method. Network re-auth interval is the time in which another key needs to be dynamically issued.

- **WPA2-PSK (Wi-Fi Protected Access 2 – Pre-Shared Key)**—Suitable for home and SOHO environments, WPA2-PSK also uses AES encryption and requires you to enter a password and a re-key interval time.

- **Mixed WPA2 / WPA**—During transitional times for upgrades in the enterprise environment, this mixed authentication method allows "upgraded" and users not yet "upgraded" to access the network via the Lynx L-525. RADIUS server information must be entered for WPA and a as well as a group re-key interval time. Both TKIP and AES are used.

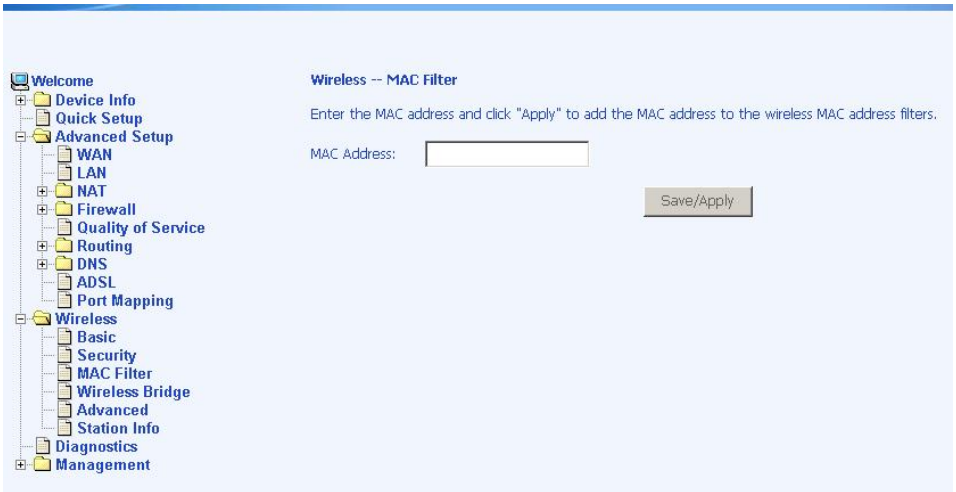
- **Mixed WPA2 / WPA-PSK**—Useful during transitional times for upgrades in the home or SOHO environment, a pre-shared key must be entered along with the group re-key interval time. Both TKIP and AES are also used.



MAC Filter

The MAC filter screen allows you to manage MAC address filters. Add the MAC addresses that you want to manage and then select the mode that you want to use to manage them. You can disable this feature or you can allow or deny access to the MAC addresses that you add to the list.

The following screen appears when you want to add a MAC address to the filter. When completed, click on the **Save / Apply** button.



Wireless Bridge

In this next screen, you can select the mode which you want the Lynx L-525 to be in, either access point or wireless bridge.

Welcome
Device Info
Quick Setup
Advanced Setup
WAN
LAN
NAT
Firewall
Quality of Service
Routing
DNS
ADSL
Port Mapping
Wireless
Basic
Security
MAC Filter
Wireless Bridge
Advanced
Station Info
Diagnostics
Management
Wireless -- Bridge
This page allows you to configure wireless bridge features of the wireless LAN interface. You can select Wireless Bridge (also known as Wireless Distribution System) to disables acess point functionality. Selecting Acess Point enables access point functionality. Wireless bridge functionality will still be available and wireless stations will be able to associate to the AP. Select Disabled in Bridge Restrict which disables wireless bridge restriction. Any wireless bridge will be granted access. Selecting Enabled or Enabled(Scan) enables wireless bridge restriction. Only those bridges selected in Remote Bridges will be granted access.
Click "Refresh" to update the remote bridges. Wait for few seconds to update.
Click "Save/Apply" to configure the wireless bridge options.
AP Mode:
Access Point
Bridge Restrict:
Disabled
Refresh
Save/Apply

Advanced

Advanced features of the wireless LAN interface can be configured in this section.

Settings can be configured for the following—

- **AP Isolation**—if you select enable, then each of your wireless clients will not be able to communicate with each other.

- **Band**—a default setting at 2.4GHz – 802.11g

- **Channel**-- 802.11b and 802.11g use channels to limit interference from other devices. If you are experiencing interference with another 2.4Ghz device such as a baby monitor, security alarm, or cordless phone, then change the channel on your Lynx L-525.

- **Multicast Rate**—the rate at which a message is sent to a specified group of recipients.

- **Basic Rate**—the set of data transfer rates that all the stations will be capable of using to receive frames from a wireless medium.

- **Fragmentation Threshold**—used to fragment packets, which help improve performance in the presence of radio frequency (RF) interference.

- **RTS Threshold (Request to Send Threshold)**—determines the packet size of a transmission through the use of the Lynx L-525 to help control traffic flow.

- **DTIM Interval**—sets the Wake-up interval for clients in power-saving mode.

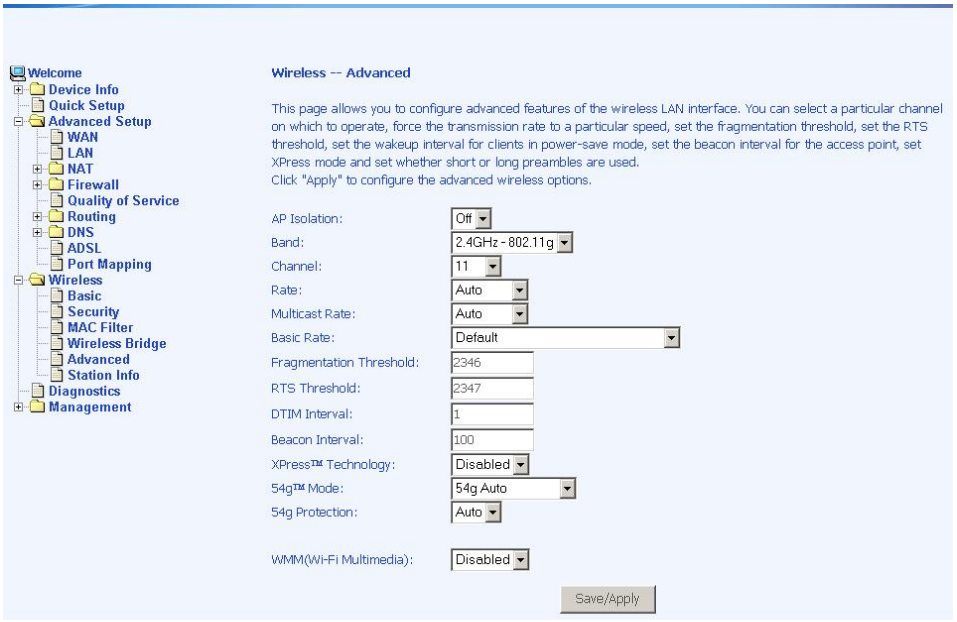
- **Beacon Interval**—a packet of information that is sent from a connected device to all other devices where it announces its availability and readiness. A beacon interval is a period of time (sent with the beacon) before sending the beacon again. The beacon interval may be adjusted in milliseconds (ms).

- **Xpress Technology—**a technology that utilizes standards based on framebursting to achieve higher throughput. With Xpress Technology enabled, aggregate throughput (the sum of the individual throughput speeds of each client on the network) can improve by up to 25% in 802.11g only networks and up to 75% in mixed networks comprised of 802.11g and 802.11b equipment.

- **54g Mode—** 54g is a Broadcom Wi-Fi technology.

- **54g Protection**--the 802.11g standards provide a protection method so 802.11g and 802.11b devices can co-exist in the same network without "speaking" at the same time. Do not disable 54g Protection if there is a possibility that an 802.11b device may need to use your wireless network. In Auto Mode, the wireless device will use RTS/CTS (Request to Send / Clear to Send) to improve 802.11g performance in mixed 802.11g/802.11b networks. Turn protection off to maximize 802.11g throughput under most conditions.

- **WMM (Wi-Fi Multimedia)**—feature that improves your experience for audio, video and voice applications over a Wi-Fi network.

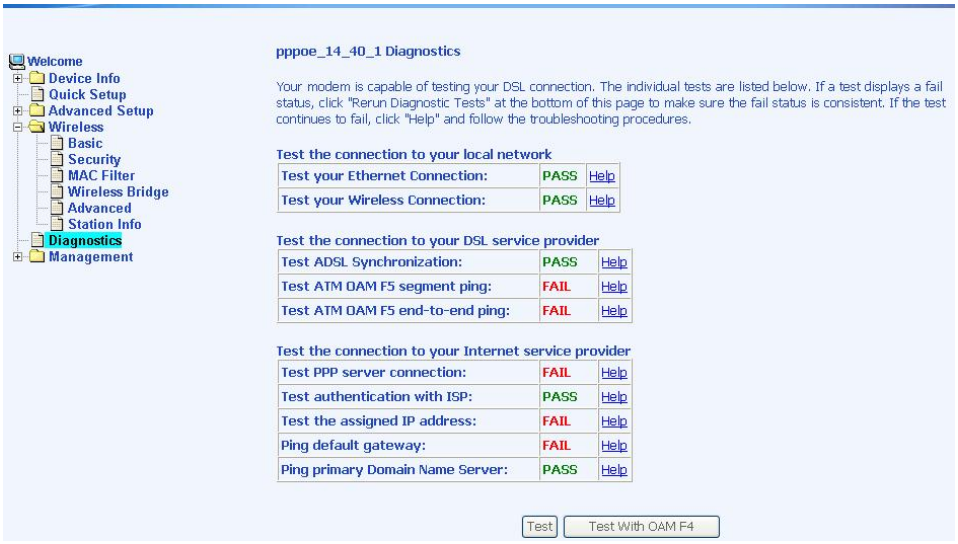


Station Info

The **Station Info** page shows stations that have been authorized access to the Lynx L-525 through its wireless function.

Troubleshooting–Diagnostics

The diagnostics screen allows you to run diagnostic tests to check your DSL connection. In addition, you can test the connection to your DSL service provider.


Welcome
Device Info
Quick Setup
Advanced Setup
Wireless
Basic
Security
MAC Filter
Wireless Bridge
Advanced
Station Info
Diagnostics
Management
pppoe_14_40_1 Diagnostics
Your modem is capable of testing your DSL connection. The individual tests are listed below. If a test displays a fail status, click "Rerun Diagnostic Tests" at the bottom of this page to make sure the fail status is consistent. If the test continues to fail, click "Help" and follow the troubleshooting procedures.
Test the connection to your local network
Test your Ethernet Connection: PASS Help
Test your Wireless Connection: PASS Help
Test the connection to your DSL service provider
Test ADSL Synchronization: PASS Help
Test ATM OAM F5 segment ping: FAIL Help
Test ATM OAM F5 end-to-end ping: FAIL Help
Test the connection to your Internet service provider
Test PPP server connection: FAIL Help
Test authentication with ISP: PASS Help
Test the assigned IP address: FAIL Help
Ping default gateway: FAIL Help
Ping primary Domain Name Server: PASS Help
Test
Test With OAM F4

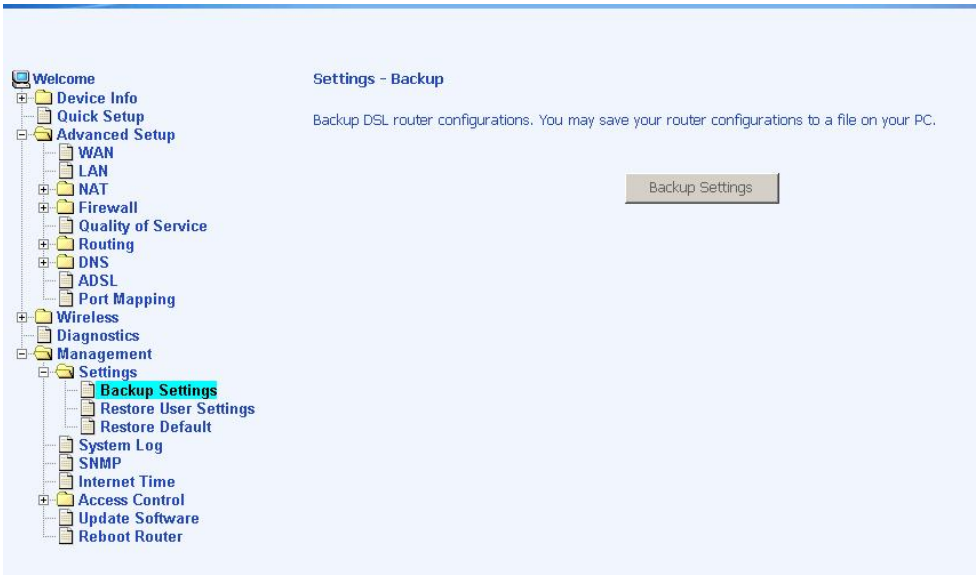
Management

The Management section gives you access to certain setups for the purpose of maintaining the system, including backing-up the configurations, viewing system log, maintaining access control, updating software, etc.

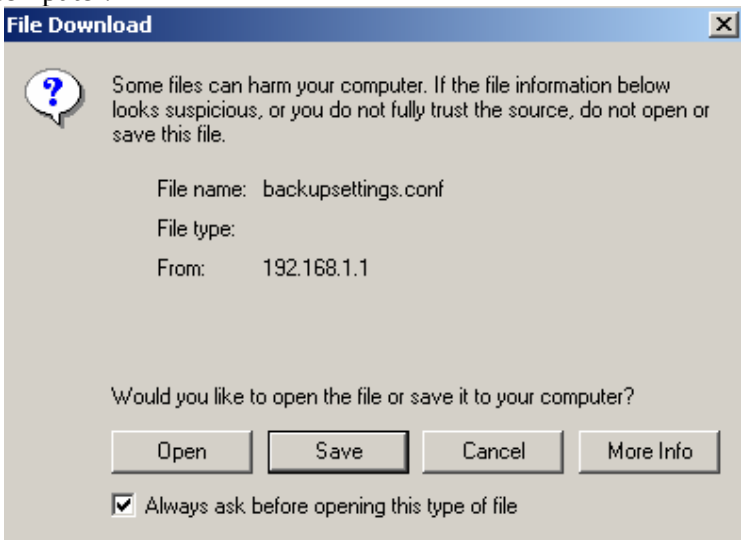
Settings

Backup Settings

To save a copy of the configurations that you have made on your Lynx L-525, click on the **Backup Settings** button.

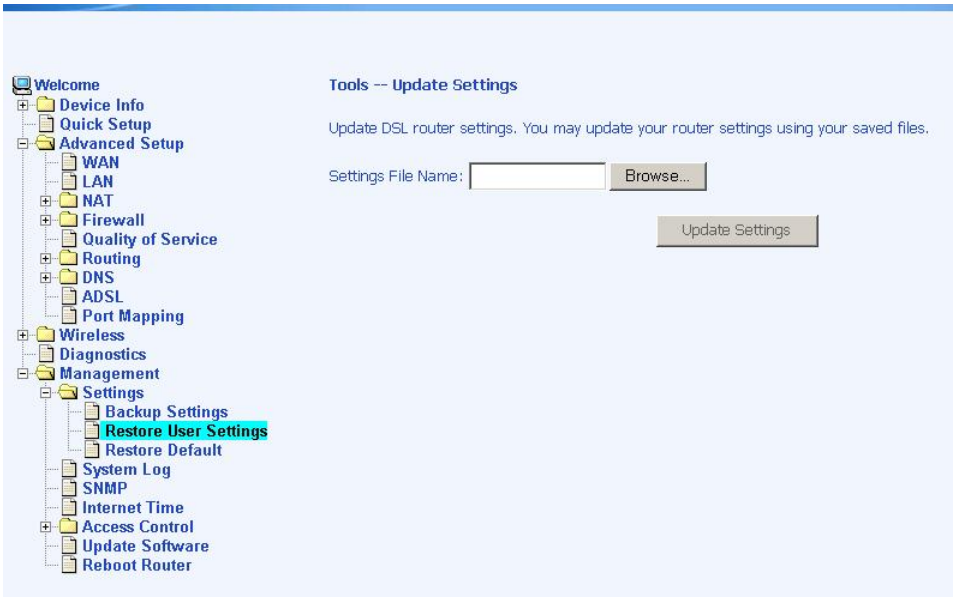


The following pop-up screen will appear with a prompt to open or save the file to your computer.


File Download
Some files can harm your computer. If the file information below looks suspicious, or you do not fully trust the source, do not open or save this file.
File name: backupsettings.conf
File type:
From: 192.168.1.1
Would you like to open the file or save it to your computer?
Open
Save
Cancel
More Info
Always ask before opening this type of file

Restore User Settings

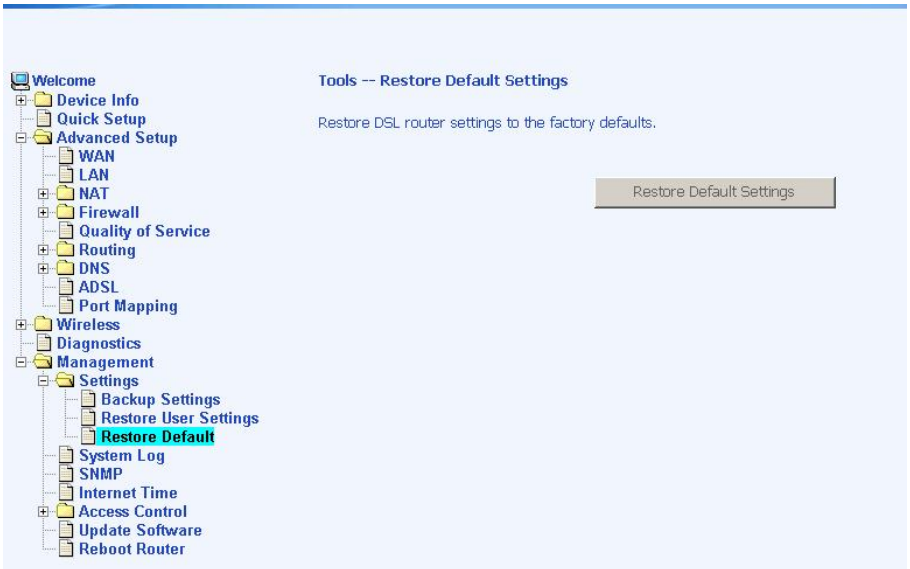
To restore saved settings, select **Management→ Settings→ Restore** User Settings. Then select the backup file you want to restore and click on **Update Settings**.

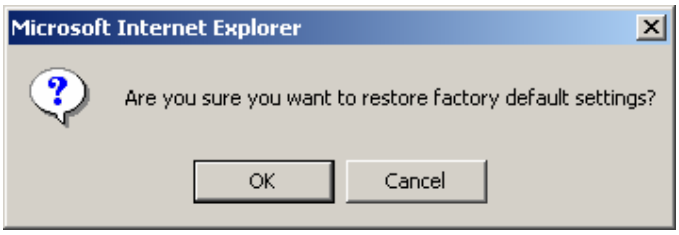


The Lynx L-525 will restore settings and automatically reboot to activate the restored settings.

Restore Default

Restore Default will erase all current settings and restore the Lynx L-525 to factory default settings. To restore the Lynx L-525 to factory default settings, select **Management→Settings→Restore** Default. Reply **OK** to the confirmation dialog.



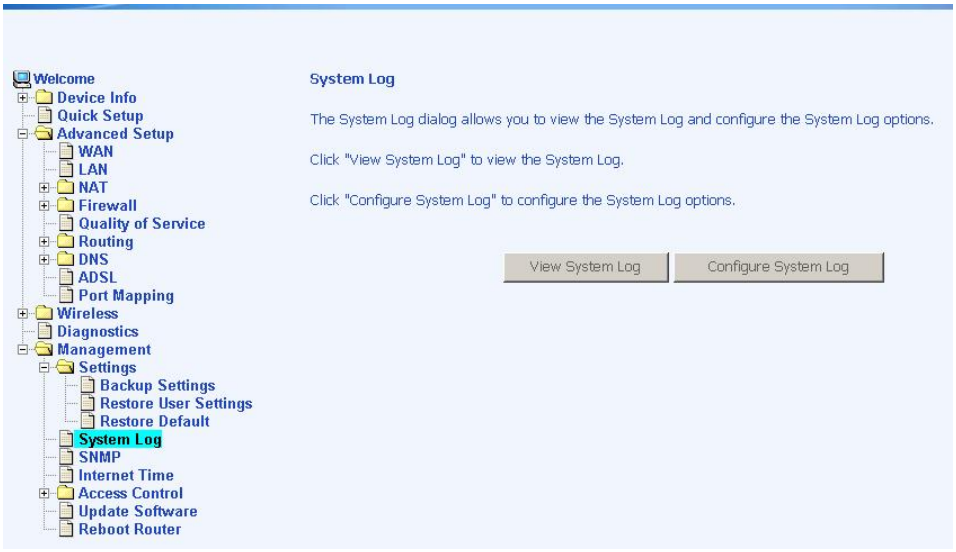


The Lynx L-525 will restore the default settings and automatically reboot.

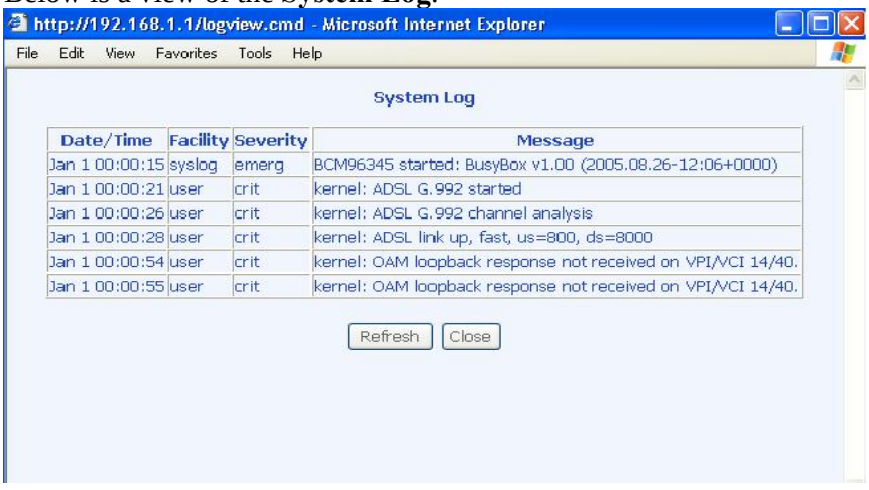
System Log

The System Log dialog allows you to view the System Log and configure the System Log options.

To view the System Log click on the **View System Log** button to check the log file.

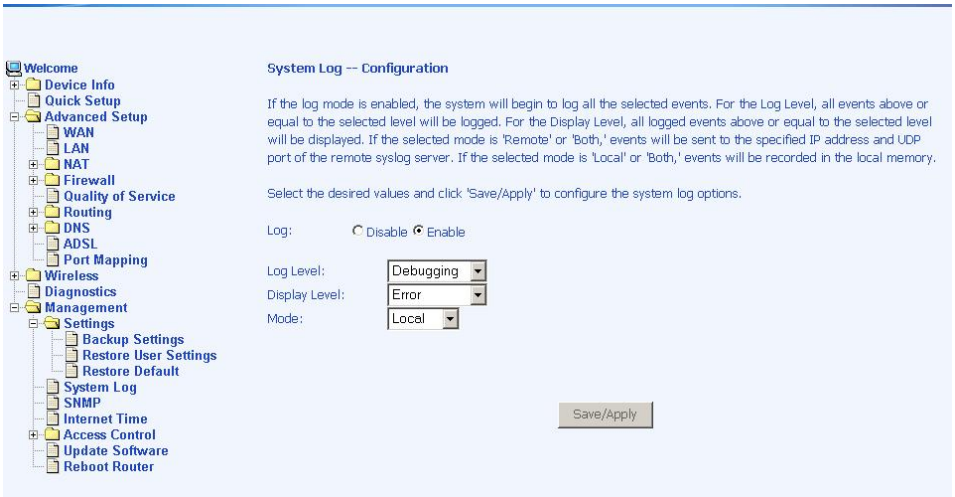


Below is a view of the **System Log**.


http://192.168.1.1/logview.cmd - Microsoft Internet Explorer
File Edit View Favorites Tools Help
System Log
Date/Time Facility Severity Message
Jan 1 00:00:15 syslog emerg BCM96345 started: BusyBox v1.00 (2005.08.26-12:06+0000)
Jan 1 00:00:21 user crit kernel: ADSL G.992 started
Jan 1 00:00:26 user crit kernel: ADSL G.992 channel analysis
Jan 1 00:00:28 user crit kernel: ADSL link up, fast, us=800, ds=8000
Jan 1 00:00:54 user crit kernel: OAM loopback response not received on VPI/VCI 14/40.
Jan 1 00:00:55 user crit kernel: OAM loopback response not received on VPI/VCI 14/40.
Refresh
Close

Configure System Log

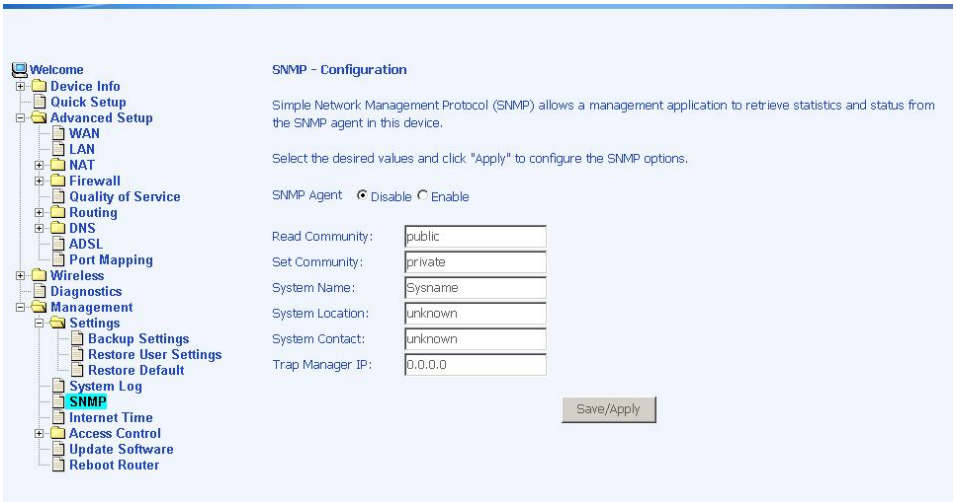
If the log is enabled, the system will log selected events: Emergency, Alert, Critical, Error, Warning, Notice, Informational, and Debugging. All events above or equal to the selected log level will be logged and displayed.


Welcome
Device Info
Quick Setup
Advanced Setup
WAN
LAN
NAT
Firewall
Quality of Service
Routing
DNS
ADSL
Port Mapping
Wireless
Diagnostics
Management
Settings
Backup Settings
Restore User Settings
Restore Default
System Log
SNMP
Internet Time
Access Control
Update Software
Reboot Router
System Log -- Configuration
If the log mode is enabled, the system will begin to log all the selected events. For the Log Level, all events above or equal to the selected level will be logged. For the Display Level, all logged events above or equal to the selected level will be displayed. If the selected mode is 'Remote' or 'Both,' events will be sent to the specified IP address and UDP port of the remote syslog server. If the selected mode is 'Local' or 'Both,' events will be recorded in the local memory.
Select the desired values and click 'Save/Apply' to configure the system log options.
Log: Disable Enable
Log Level: Debugging
Display Level: Error
Mode: Local
Save/Apply

If the selected mode is “Remote” or “Both”, events will be sent to the specified IP address and UDP port of a remote system log server. If the selected mode is “Local” or “Both”, events will be recorded in the local memory. Select the desired values and click on the “**Save/Apply**” button to configure the system log options.

SNMP

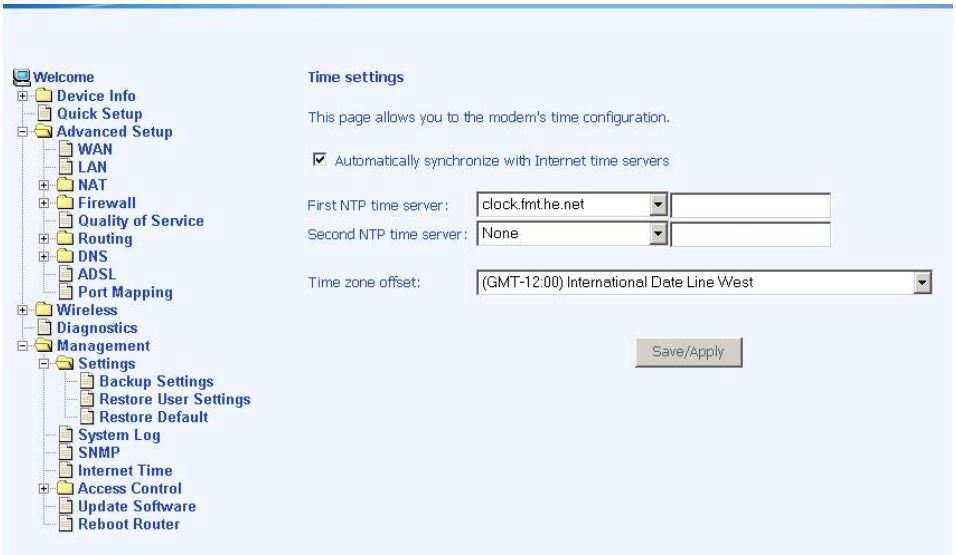
SNMP (Simple Network Management Protocol) provides a means to monitor status and performance as well as to set configuration parameters. It enables a management station to configure, monitor and receive trap messages from network devices.



Internet Time

The Time Settings page allows you to automatically synchronize your time with a timeserver on the Internet.

If you choose to automatically synchronize with Internet time servers, then click on the box and the fields below appear.
Select from the list of NTP (Network Time Protocol) time servers. Then select the time zone that you are in and click on **Save / Apply** to save and complete your time settings.

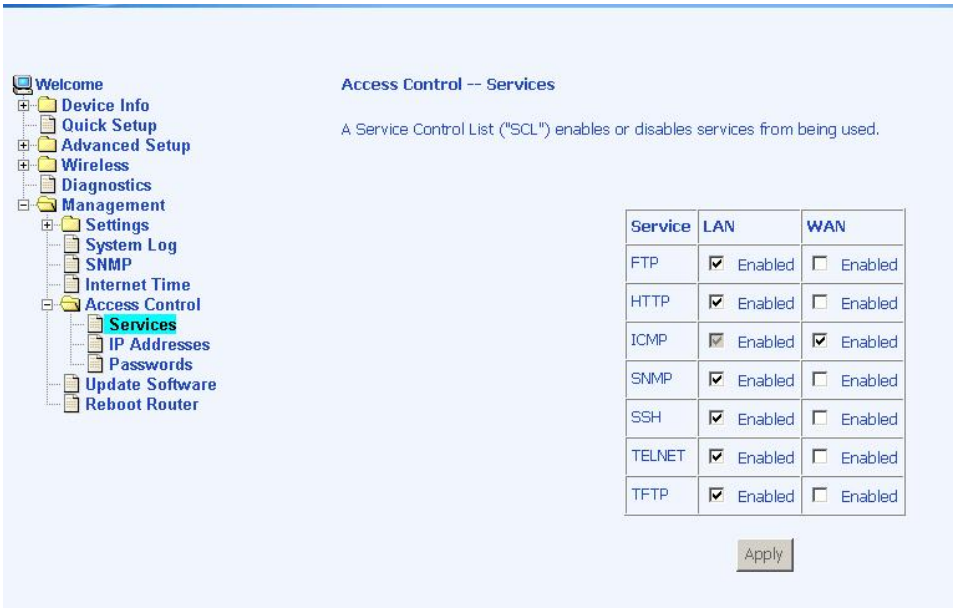


Access Control

You can enable or disable some services of your Lynx L-525 by LAN or WAN. If no WAN connection is defined, only the LAN side can be configured.

Services

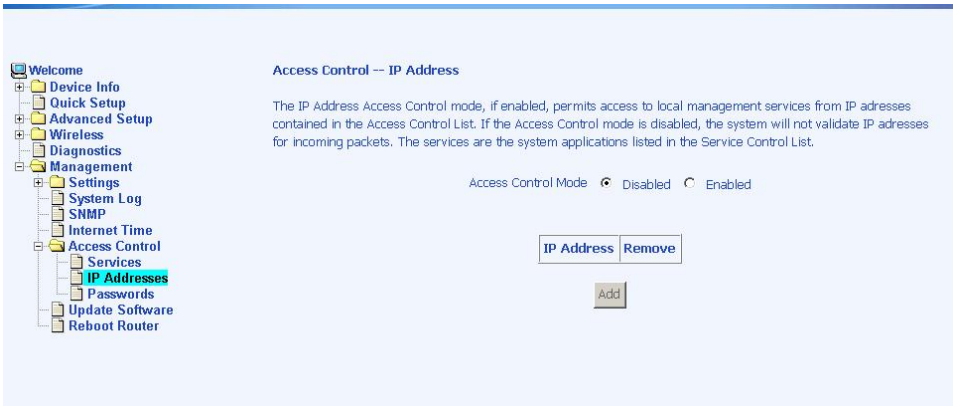
Services that can be enabled / disabled on the LAN / WAN are FTP, HTTP, ICMP, SNMP, SSH, Telnet, and TFTP.



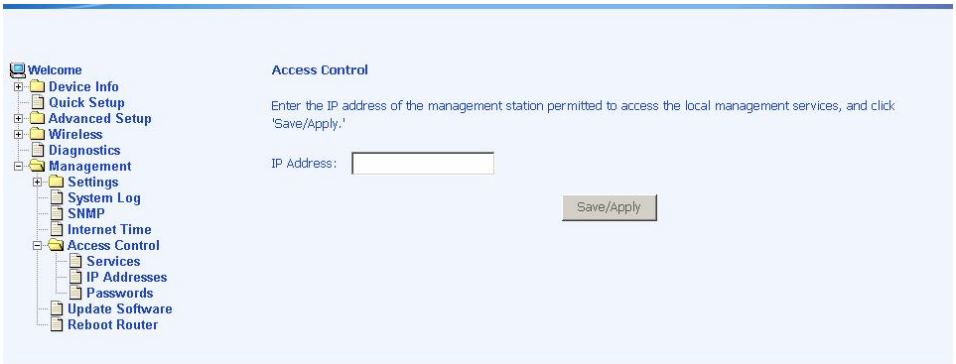
IP Addresses

Web access to the Lynx L-525 can be limited when Access Control Mode is enabled. The IP addresses of allowed hosts can be added using **Access Control→IP Addresses.**

Add the IP address to the IP address list by clicking on the **Add** button, then select "**Enabled**" to enable Access Control Mode.

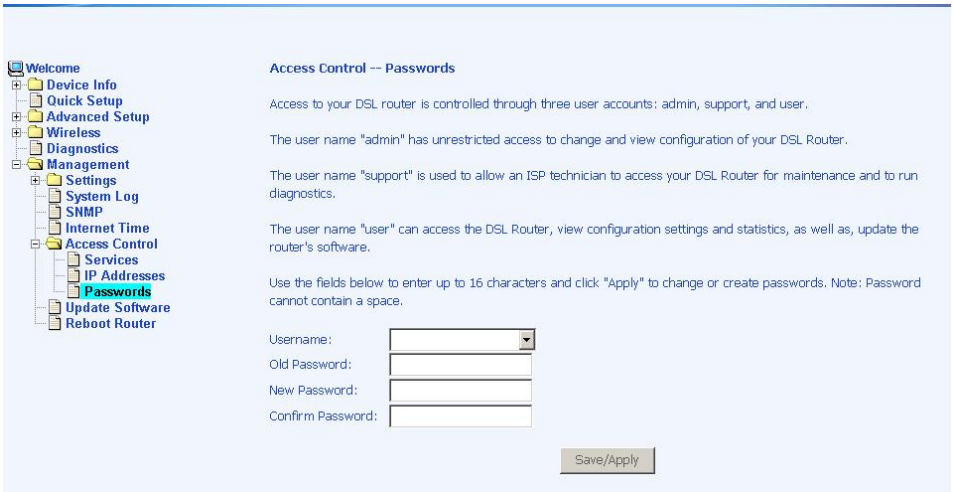


To assign the IP address of the management station that is permitted to access the local management services, enter the IP address in the box and click on the **Save / Apply** button.



Passwords

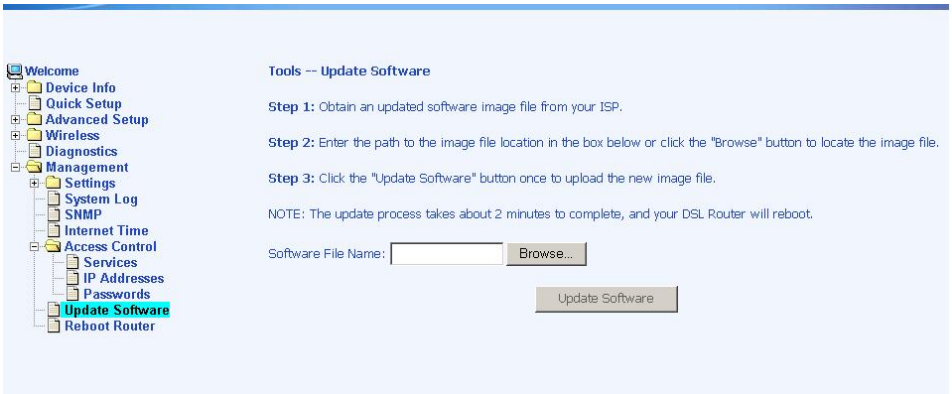
To change a password, Access the **Passwords** screen under the **Access Control** section. Select an account and enter the current password and the new password and then click on the **Save / Apply** button.


Welcome
Device Info
Quick Setup
Advanced Setup
Wireless
Diagnostics
Management
Settings
System Log
SNMP
Internet Time
Access Control
Services
IP Addresses
Passwords
Update Software
Reboot Router
Access Control -- Passwords
Access to your DSL router is controlled through three user accounts: admin, support, and user.
The user name "admin" has unrestricted access to change and view configuration of your DSL Router.
The user name "support" is used to allow an ISP technician to access your DSL Router for maintenance and to run diagnostics.
The user name "user" can access the DSL Router, view configuration settings and statistics, as well as, update the router's software.
Use the fields below to enter up to 16 characters and click "Apply" to change or create passwords. Note: Password cannot contain a space.
Username:
Old Password:
New Password:
Confirm Password:
Save/Apply

Update Software

If your ISP releases new software for this Lynx L-525, follow these steps to perform an upgrade.

1. Obtain an updated software image file from your ISP.
2. Enter the path to the image file location or click on the **Browse** button to locate the image file.
3. Click the **Update Software** button once to upload the new image file.


Welcome
Device Info
Quick Setup
Advanced Setup
Wireless
Diagnostics
Management
Settings
System Log
SNMP
Internet Time
Access Control
Services
IP Addresses
Passwords
Update Software
Reboot Router
Tools -- Update Software
Step 1: Obtain an updated software image file from your ISP.
Step 2: Enter the path to the image file location in the box below or click the "Browse" button to locate the image file.
Step 3: Click the "Update Software" button once to upload the new image file.
NOTE: The update process takes about 2 minutes to complete, and your DSL Router will reboot.
Software File Name:
Browse...
Update Software

Reboot Lynx L-525

Select **Management→Reboot Router** to reboot the Lynx L-525 using the web interface. The Lynx L-525 will save the current configuration and reboot itself using the new configuration.